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# The Economist

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September 5th 2009

The vote that changed Japan

The electorate has thrown out not just a party but a whole system: leader



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## Politics this week

Sep 3rd 2009

From The Economist print edition

The Democratic Party of Japan won a landslide victory in parliamentary elections in **Japan**, increasing its seats from 119 to 308. Its victory brings an end to half a century of almost uninterrupted rule by the Liberal Democratic Party. Yukio Hatoyama will become prime minister. [See article](#)

General Stanley McChrystal, the commander of NATO and American forces in **Afghanistan**, submitted his long-awaited review of allied strategy, saying "the situation...is serious, but success is achievable." His priorities do not differ much from those of his predecessors, but he may ask for more troops. Meanwhile, Afghanistan's deputy chief of intelligence was killed in a suicide-bomb attack in which 22 other people died. [See article](#)



Getty Images

With over 60% of polling stations reporting results, **Hamid Karzai** had 47% of the votes in Afghanistan's presidential election, against 33% for his chief challenger, Abdullah Abdullah, who presented evidence of mass fraud and coercion.

A report from the UN said cultivation of poppies in Afghanistan dropped by 22% in the past year and **opium production** fell by 10%. The country is the source of 90% of the world's opium. [See article](#)

Rajasekhara Reddy, the chief minister of the Indian state of **Andhra Pradesh** and an influential member of the Congress party, was killed in a helicopter crash. The area where the helicopter went down is a Maoist-rebel stronghold.

The Commonwealth, an organisation of former British colonies, suspended **Fiji** for lack of progress towards re-establishing democracy. The ban means all Commonwealth aid will be cut off; it is only the second full suspension in the body's history.

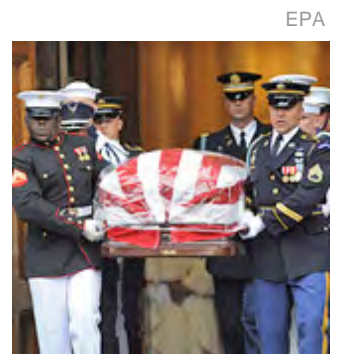
An earthquake struck the Indonesian island of **Java**, killing scores of people.

## Charlie's plant

Charlie Crist, **Florida's** Republican governor, appointed his former chief of staff to fill the Senate seat left vacant by the retirement of Mel Martinez. The appointment is on an interim basis until an election in 2010. Mr Crist is running for the seat himself.

**Edward Kennedy** was laid to rest at Arlington Cemetery. Before the burial the senator was eulogised by Barack Obama at a mass in Boston. A special election for Mr Kennedy's seat in Massachusetts will be held on January 19th. The legislature will decide whether to change the law and allow an interim appointment, as Mr Kennedy wanted. [See article](#)

A Gallup poll showed that 45% of Americans identify with or lean towards the **Democratic Party**, down from 52% around the time of Mr Obama's inauguration. Those identifying with the Republican Party rose to 40%, from 35% in January.



EPA

## A social contract

**Brazil's** government unveiled four bills fixing new rules for the development of big, new offshore oilfields. The government wants their ownership to be vested in a new state company, linked to a social fund. In place of the current system of concessions, private operators would enter production-sharing agreements with Petrobras, Brazil's public-private oil giant, into which the state will inject more funds. [See article](#)

A law calling a referendum on a constitutional change that would allow **Colombia's** president, Álvaro Uribe, to run for a third consecutive term at an election next year received final approval from the country's Congress. It must also be approved by the Constitutional Court before the referendum can be held. [See article](#)

Gunmen opened fire at a drug rehabilitation centre in Ciudad Juárez, killing at least 17 people. The city is the most violent in **Mexico**. Many of the 1,400 homicides so far this year are tied to drug gangs. Meanwhile, the police chief of Michoacán was shot dead. The state is the base of the notorious "La Familia" gang.

## Divergent thinking

Mohamed ElBaradei, the outgoing head of the International Atomic Energy Agency, the UN's nuclear watchdog, said that **Iran** would not produce a nuclear weapon any time soon. "In many ways, I think the threat has been hyped," he told the *Bulletin of the Atomic Scientists*. But in its latest report the agency chided Iran for concealing military aspects of its nuclear programme, which the Islamic Republic says is only civilian.

Iran's supreme leader, **Ayatollah Ali Khamenei**, said that the study of liberal arts and social sciences had led to a woeful "loss of belief in godly and Islamic knowledge", and hinted, as universities prepared for the new academic year, that secular-minded lecturers should be purged. [See article](#)

The government of **Yemen** rejected a ceasefire offer by rebels in the country's northern Saada region, where fighting has raged since the army launched an offensive in mid-August. The UN says at least 35,000 have recently been made homeless, on top of 150,000 displaced since fighting began against tribes allied to the Houthi clan in 2004.

**Libya's** leader, Muammar Qaddafi, celebrated the 40th anniversary of the coup that brought him to power. Western leaders stayed away from the extravaganza, partly because of the furore following the hero's welcome given to Abdelbaset al-Megrahi, the Libyan intelligence agent convicted of blowing up a Pan Am aircraft over Lockerbie in 1988, killing 270 people. He returned home after an early release by Scotland, supposedly on compassionate grounds.

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## Preparing for the big one

The Christian Democrats did badly in three state elections in **Germany**, but so did their rival Social Democrats. The winners were the smaller parties, notably the Left Party and the Free Democrats. The poor performance of the two big parties may make a grand coalition between them more likely after the forthcoming federal election. [See article](#)

**Turkey** and **Armenia** announced a tentative agreement to establish diplomatic ties and reopen their border. The deal needs to be ratified by the two countries' parliaments. [See article](#)

**Greece's** prime minister, Costas Karamanlis, called a snap election, possibly in early October. It is likely to be won by the Socialist opposition. [See article](#)

The **European Commission** proposed that European Union members should jointly agree to admit more refugees from conflict zones and poor countries. However, most countries are trying to take in fewer refugees, not more.

## Business this week

Sep 3rd 2009

From The Economist print edition

**EBay** decided to offload **Skype**, four years after it bought the business. It sold a 65% stake to an investment group, which paid \$2 billion in cash. Until recently eBay had considered floating the unit in an offering. EBay bought Skype, an internet-telephony firm, to improve communication between buyers and sellers on its websites. The match was a poor fit, causing eBay to record a massive write-down in 2007. [See article](#)

The European Union's competition regulator, Neelie Kroes, said she would investigate further **Oracle's** takeover of **Sun Microsystems**, which was announced in April this year. The deadline for her ruling is January 19th 2010. [See article](#)

## Daredevil

**Disney** surprised Hollywood with its purchase of **Marvel Entertainment** for \$4 billion. Films based on Marvel's comic-book characters, such as Spider-Man and the X-Men, have drawn some of the biggest audiences of recent years. Although Marvel is committed to current projects with other studios, Disney hopes that its catalogue of 5,000 action-heroes will eventually provide material for many blockbusters, as well as the increasingly lucrative accompanying licensed merchandise. [See article](#)

It emerged that Sony's Vaio-branded PCs in America will now offer **Google's Chrome** web browser alongside Microsoft's Internet Explorer. It is the first deal Google has struck that bundles its browser with computers.

The chief executive of **Wells Fargo** gave notice that the bank would "shortly" return \$25 billion in bail-out money. Of the big banks that were helped by the Troubled Asset Relief Programme, only Wells Fargo, Bank of America and Citigroup have yet to repay. John Stumpf said his bank would not need to raise extra equity and would pay back the money in a "shareholder-friendly way" that would not dilute investors' stock.

## China's rocky fortunes

The **Shanghai Composite Index** dropped by 6.7% on August 31st after falling 3% on the previous trading day (it made up some of the loss later in the week). China's benchmark share-index has declined by around a fifth since August 4th, when it reached its high for the year so far.

**Baker Hughes**, one of the world's biggest providers of oilfield services, agreed to buy **BJ Services**, a former subsidiary, in a transaction valued at \$5.5 billion. The deal greatly boosts Baker Hughes's business in "pressure pumping", which enables drillers to squeeze more oil out of older wells and access hard-to-reach natural gas, such as that found in shale rock formations.

BP made a big **oil discovery**. The "giant" field is located in the Gulf of Mexico some 400km (250 miles) off the Texas coast and holds perhaps 3 billion barrels of oil, though perhaps only a fraction is likely to be recoverable. BP, the biggest operator in the Gulf, reached the field by drilling 10.7km below the sea bed.

**Areva** reported a steep fall in net profit for the first half as the French state-owned builder of nuclear plants accounted for a €550m (\$789m) charge at its delayed new-generation OL3 reactor in Finland. The project has been beset by a tussle with the owner, a Finnish utility, over safety regulations, costing Areva €2.3 billion so far.

The details were made public of **Pfizer's** \$2.3 billion settlement with authorities for the misleading promotion of some of its medicines. It is the biggest ever fine levied against a drugs company in America.

**Boeing** produced (another) schedule for its delayed 787 Dreamliner. The test flight will now take place

before the end of 2009 and the first deliveries will come in the fourth quarter of 2010.

The “cash for clunkers” scheme in America pushed **car sales** in August to their highest level for many months. Asian carmakers did well as drivers traded in gas-guzzlers for smaller models. Toyota’s sales were 6.4% higher than a year earlier and Honda’s were up by 10%. Ford sold 17% more cars, though General Motors’ sales were down by a fifth, as it could not match a successful discount promotion it held in August 2008. Chrysler’s sales also fell as it struggled to produce many cars.

## Made it

Another round of **manufacturing** data from various countries indicated that the industry was pulling out of a slump. A key measure in the United States passed the mark at which manufacturing expands (rather than contracts) for the first time in 19 months, helped in part by an uptick in activity from carmakers.

The **OECD** revised its forecast for economic growth this year in the G7 nations to an average -3.7%, up from the -4.1% it predicted in June. It warned central banks not to tighten policy until “well into 2010, and in some cases even beyond”.



## KAL's cartoon

Sep 3rd 2009

From The Economist print edition

Illustration by KAL



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## Japan's election

## The vote that changed Japan

Sep 3rd 2009

From The Economist print edition

**The electorate has thrown out not just a party but a whole system**

Illustration by Jon Berkeley



JAPAN is a decent, consensual and egalitarian country. Much of it is still prosperous, despite a dismal period for the economy. The beliefs of its two main political parties are often hard to tell apart. Both their leaders are grandsons of (rival) prime ministers. There were no loud celebrations when the results of the general election were announced on August 30th. It is tempting therefore to write it off as no earth-shattering event.

That would be a mistake. The vote, in which the Democratic Party of Japan (DPJ) broke the half-century lock of the Liberal Democratic Party (LDP) on power, marked the overdue destruction of Japan's post-war political system. The question is what will now take its place.

### System change

There are three reasons to believe that this vote marks a big change. The first is the scale of the DPJ's victory. When the LDP lost once before, in 1993, it remained easily the biggest party in the Diet, and within 11 months was back in power. Today, the LDP is devastated. It keeps just 119 out of 480 seats in the lower house of the Diet, down from 300. The DPJ has 308.

Second, the rejection of the LDP is the culmination of deep changes in Japan's political culture. The LDP, a pro-American, pro-business consequence of the cold war, was undermined by two decades in which consumer interests and non-profit groups slowly mounted a challenge to its paternalism. Electoral reform in the mid-1990s introduced single-member districts, helping to create an opposition that could take on the LDP.

Third, by overthrowing the LDP, Japan's voters have turfed out not just a party, but a whole system. After the LDP's creation in 1955, Japan's "iron triangle" of party, bureaucrats and business promoted breakneck growth, and distributed its fruits equitably: cheap finance for big business, contracts for construction companies, jobs for the masses, subsidies for farmers and re-election for the LDP machine.

But corruption flourished, as tax money went to the highest bidders. Growth slowed from the 1980s, and the system was too inflexible to adjust. Voters grew more demanding. Roads, dams and temporary, low-paid jobs were no longer enough. People wanted careers. They wanted doctors, nursing homes and decent

schools that would keep young families from moving to the big cities, leaving only the old behind (see [article](#)). And they wanted confidence that the government would still be solvent when they drew down their pensions—not a sure bet in a country with a national debt approaching 200% of GDP.

Successive LDP administrations failed to respond to these demands because the government was often the weakest of the three sides of the triangle. Ministers' best intentions were undermined by bureaucrats or party barons with their own networks of power. Hence the voters' rejection of the old system in favour of something unfamiliar in Japan: an open and accountable government.

The huge task of creating it falls to Yukio Hatoyama, whom the Diet will appoint as prime minister on September 16th. It is not clear whether he, or his party, is up to the job; for alarmingly little is known—even by the voters—about the people who have taken power in the world's second-biggest economy.

In opposition the DPJ tapped into the powerful, rather Nordic, vision of their society that many Japanese people cling to and fear they are losing. Accordingly, it rejected the free-market version of change championed by Junichiro Koizumi, a reforming LDP prime minister. This left-leaning, pro-union bias explains the party's silence on liberalisation and deregulation of medical and other services that would boost productivity and help create the demand and jobs that Japan badly needs. The party has also made mild anti-American noises about military bases and the Japanese fleet. A market economy might be just about acceptable to the party, but an American market society, however defined, is not.

To Western ears, some of this sounds worrying. Yet the DPJ may be less frightening in office than in prospect. It has already begun to temper its foreign-policy rhetoric to calm American nerves. And its big economic idea, radical by Japan's standards, is broadly welcome. Where the LDP looked after producers' interests, the DPJ says it will put consumers first. It also says it will steer the economy away from export-led growth towards domestic demand. These assurances, coupled with a stronger social safety net and employment provisions (see [article](#)), may help lift some of the deflationary fog that has lain heavy over Japan for so long.

## **Bureaucrats and the budget**

But all this depends on Mr Hatoyama's first task: redesigning government. Here he starts with an advantage. Unlike the LDP, the DPJ government will not have to fight off a parallel party power structure when it makes policy. The cabinet will therefore be more powerful, and more accountable.

The test will be taking on the bureaucracy. Mr Hatoyama will have to strike a delicate balance. On the one hand the DPJ demands accountability, and promises to break bureaucrats' backs to get it. On the other, it needs to harness bureaucrats' talents if it is to formulate and carry out sound policy, particularly since so many new DPJ politicians are wet behind the ears.

How Mr Hatoyama both motivates bureaucrats and punishes them when they step out of line will make or break the DPJ. The crucial battle comes between now and December, in drawing up the budget for the 2010 fiscal year. Ministries have already submitted their spending plans, including pork for favoured groups, hoping for the usual lack of political oversight. The DPJ promises to rebuild the budget-making process from scratch, going through programmes line by line. That, too, is a chance for the new government to show that it is not as profligate as its opponents have claimed.

Japan has had other opportunities for reform, and has failed to take them. Mr Hatoyama, with no favours to return, has a chance both to revolutionise how Japan is governed and to revitalise the economy. He will need judgment for the first, and imagination for the second. Wish him plenty of both.

## Russia's past

**The unhistory man**

Sep 3rd 2009

From The Economist print edition

**Russia should do more to condemn Stalin's crimes—for its own sake**

Reuters



EVERY country highlights the good bits in its history and ignores the bad. Russia's keenness that none should forget the great sacrifices its people made in the second world war—it did more than any other country to defeat the Nazis—is therefore understandable. Yet its determination to whitewash the darker bits of its past goes far beyond normal image-polishing and ranks among the most sinister features of Vladimir Putin's ten years as Russia's dominant political force.

At this week's commemorative ceremonies in Gdansk, Mr Putin offered his Polish hosts some comfort (see [article](#)). Unlike Russian official media in recent weeks, he did not blame Poland for starting the war, or try to claim that the Soviet Union's invasion of Poland on September 17th 1939 was justified. Unlike several Russian commentators, he did not maintain that the Nazis rather than the Soviets had perpetrated the Katyn massacre of 20,000 Polish officers and intellectuals in 1940. And unlike official Russian history books, which talk mostly of the "Great Patriotic War" that started only when Hitler attacked the Soviet Union in 1941, he accepted September 1939 as the beginning of the conflict.

Yet Mr Putin's remarks still reflect a worrying blind spot. Under his leadership, Russia has rewritten history to reinstate the Stalinist version, in which the Soviet Union bears no guilt for the war or for the enslavement of eastern Europe. Mr Putin has been evasive about the iniquity of the Molotov-Ribbentrop pact, the secret 1939 deal that led to the carve-up of Poland and other east European countries. And he has described the Soviet Union's collapse as the greatest geopolitical catastrophe of the 20th century, which jars with those who see the end of communism as a blessed liberation. No wonder some in eastern Europe detect a worrying new revanchism.

As well as rewriting the past, Mr Putin has closed Russia's archives again and criminalised attempts to rebut his version of history. Under a new law, anyone who "falsifies" the Kremlin's version of history, for example by equating Hitler and Stalin, two of the 20th century's worst mass murderers, may be prosecuted. Suggesting that 1945 brought not liberation but new occupation for eastern Europe is also banned.

All this marks a big step back from the 1990s, when Boris Yeltsin bravely came to terms with the horrors of Russia's past. In 1991 he apologised to Estonia for its forcible annexation by the Soviet Union. He also opened up previously secret Soviet wartime archives. That put Russia on the same track as post-war Germany, which has spent decades in the commendable pursuit of reconciliation with victims of Nazism.

**The biggest victims at home**

Just as the Russians suffered most from communism, so the worst damage from revived Soviet-style history is done to Russia itself. It has become an ingredient in the toxic mix of xenophobia and chauvinism that the official Russian media, especially television, repeatedly serve up. The Kremlin uses history as a weapon to imply that east European countries which see the past differently are closet Nazis. It also tacitly justifies the loss of freedom at home as a price worth paying to defeat imaginary external enemies.

The renovation of Kurskaya metro station in Moscow last month restored a Soviet-era plaque glorifying Stalin for inspiring "labour and heroism". The dictator's rehabilitation is a shameful betrayal of ordinary Russians' suffering. The Kremlin should admit that Stalin was Hitler's accomplice before 1941, and that this nefarious alliance made the war far more dreadful than it otherwise would have been, not least for the people of the Soviet Union.



## Sudan and Darfur

## The generals have got it right

Sep 3rd 2009

From The Economist print edition

**Fewer people are dying in Darfur. But the need for a regional settlement is as urgent as ever**

Rex Features



FESTERING conflicts in faraway places tend to follow a familiar trajectory. At first there is worldwide moral outrage; next, earnest promises that "something must be done"; then, when rapid solutions fail to work, bafflement and finally a sense of hapless resignation. That sequence is common in Africa: think of Somalia and Congo. Now there is a danger that the benighted region of Darfur, in western Sudan, may join the list of seemingly insoluble problems.

Few of the continent's conflicts have provoked as much moral expostulation as when, in 2004 and 2005, the truth emerged about the Sudanese government's brutal suppression of an uprising there. The fighting has lasted longer than the second world war. Some 300,000 people have been killed and nearly 3m displaced (see [article](#)). A durable settlement looks unlikely any time soon. In international forums a sense of Darfur-fatigue has spread. The world's desire to be shot of the problem may help explain the widespread reporting of a story that Martin Agwai, a Nigerian general who is stepping down as commander of the UN's peacekeeping force in Darfur, said that the war was "over".

General Agwai said no such thing. He rightly pointed to the end of the full-blown confrontation between well-marshalled rebel forces and a Sudanese army that had mastery of the skies and could bomb the recalcitrant rebel villages at will. But he also explained that, in the past three years, the nature of the fighting has dramatically changed.

Gone is the neat division between attacker and defender. Instead there is a messy and poisonous plurality of rival groups, tribes and bandits; some co-operate with the government, others with the assorted rebels. Allegiances are fickle, loyalties easily bought. The two original rebel groups have fragmented into at least 20 factions. The International Criminal Court at The Hague has indicted Sudan's president, Omar al-Bashir, for war crimes in Darfur. But it has also accused three rebel leaders of similar crimes. Even the notorious *janjaweed*, an Arab militia that served as proxies for the Sudanese army, are now as likely to fight each other or even to turn on the government if they have not been paid on time. It is wrongheaded nowadays simply to tag the rebels as "good" and the Sudanese government forces as "evil".

## Obama's man flies in

Although the death rate is sharply down, chaos on the ground still prevails—and could easily become much bloodier again. More parts of the region are unsafe for aid workers. It is harder to negotiate safe passage with increasingly unpredictable armed groups. General Agwai was promised 26,000 troops. He still has only 17,000. They cannot ensure humanitarian workers secure access to the region, so the food

and medical handouts on which some 2.7m Darfuris survive often fail to get through. A political solution is as sorely needed as ever.

Fortunately, another general, this one formerly of the American air force, is providing fresh political momentum. Scott Gration, Barack Obama's energetic new special envoy to Sudan, believes that the best chance of peace for this divided country remains the Comprehensive Peace Agreement (CPA) signed in 2005 between the Islamist government in Khartoum, in the north of the country, and the former rebels of south Sudan, who are quite separate from the Darfuris, and had been fighting their northern masters for most of the past half-century. The CPA offers a new deal for the whole of Sudan, including national elections to be held next year and the possibility of secession for the south following a referendum promised for 2011. But it has been under severe strain partly because of intertribal fighting in the south.

Mr Gration is using his political clout to force both sides to stick to their agreements under the CPA, thus offering hope that the peace will stick and that the south will be allowed to split off peacefully, if it chooses to. He has also enjoyed some success in softening the Sudanese government's stance on Darfur, for instance by persuading the regime to allow in other aid agencies to replace those expelled in retaliation for the issuing of the ICC's arrest warrant for Mr Bashir in March. Some of Mr Obama's people think Mr Bashir's indubitably nasty regime should be further isolated and squeezed by economic sanctions. Mr Gration, by contrast, favours a wary but active engagement with Sudan's government in the hope that it will be more co-operative and less brutal in Darfur and the south. At the moment Mr Gration's approach seems to be yielding results and should be supported.

## Trade agreements

## Doing Doha down

Sep 3rd 2009

From The Economist print edition

**Regional trade deals are no substitute for a Doha agreement. Indeed, they are its enemy**

Illustration by Peter Schrank



SOMETHING is usually better than nothing. Shorn of all of the economic jargon and legal niceties, that is the logic behind the booming business in bilateral trade deals that is sweeping Asia. As the Doha round of world trade talks languishes, Asia's trading nations say that they cannot afford to sit on their hands and wait for Doha to revive. Better, they argue, to loosen up trade with simpler deals between a couple of countries or, if you are truly ambitious, a handful.

Some regional trade deals in the right circumstances have indeed added to economic well-being. But the sorts of deals that are now being signed in Asia, just when multilateral trade desperately needs supporting, are likely to do less for their countries' economies than for the egos of the politicians who sponsor them. Taken as a trend, they amount to a dangerous erosion of the system of multilateral trade on which global prosperity depends.

In 2001 there were just 49 bilateral and regional free-trade agreements (FTAs) in place. A deal signed last month between India and South Korea raised the total to 167 (see article). That recent agreement was trumpeted as a boon for both economies. South Korean firms say they are keen to make more use of India as a manufacturing base from which to export to the rest of the world. In return, Indian programmers will more easily be able to set up shop in South Korea.

More such agreements are likely to follow. And who could object to that? In a world of collapsing exports and rising protectionism, the fashion for bilateral deals looks like a welcome boost to the idea that trade is good. Peer deeper, however, and the message is far less reassuring.

## Noodles all round

For a start, bilateral deals impose so much paperwork and bureaucracy on trade that companies rarely make use of their provisions. Only about a fifth of 609 firms in four Asian countries surveyed by the Asian Development Bank in 2008 took advantage of the agreements that applied to them.

When bilateral agreements are attractive to companies, it is often for the wrong reasons. Many bilateral trade deals offer favourable treatment to a few companies from a particular country at the expense of all the rest from elsewhere in the world. The companies that lose out may well be lower-cost producers, since such agreements are dictated more by politics than by economics. If so, the economy will suffer. Even if such a deal is eventually superseded by a broader one, it may already have caused long-term damage by allowing less efficient firms to become entrenched. Economies that are too small to extract concessions

from their bigger bilateral negotiating partners fare particularly badly.

Then there is the complexity of the growing number of bilateral and regional deals. Each has its own rules and administrative requirements, leading to a confusing spaghetti (or perhaps noodle soup) of preferential agreements, instead of the predictability that multilateralism promises. As such agreements multiply, there is less chance that they create the wealth that their authors claim.

Some claim that the tricky issues that stand in the way of a multilateral deal can be more easily resolved when only two countries are sitting at the table. That rarely happens: in the rush to conclude an agreement, such issues are often shelved. India's deal with ASEAN last year, for instance, put aside the poisonous question of farm trade, which was one of the deal-breakers in the Doha talks last July.

Bilateral agreements, thus, do not, on the whole, serve as stepping stones to a comprehensive global deal. On the contrary, they both distract governments from the multilateral process and offer cover for politicians' failure to advance it. Moreover, the fear of losing favourable treatment in a bilateral agreement can deter governments from talking tough in multilateral negotiations.

Some defenders of bilateralism admit all this, but cling to one argument they regard as clinching—that bilateral agreements are at least possible, whereas the chances of concluding Doha seem ever more remote. The comparison, they say, is not between local deals and a global one, but between regional deals and no deals at all.

This argument ignores the lessons of the past. The history of the multilateral trading system is littered with rows, hiatuses, disillusion, despair—and sudden success. In the 1970s many people wrote off the precursor to the World Trade Organisation. The ministerial meeting of 1982 failed and the later Uruguay round of talks nearly collapsed, before being successfully concluded. Even now, amid deep pessimism about ever finishing Doha, the Indian government is holding a summit of trade ministers in the hope of restarting the talks. If they truly want Doha to succeed, the bilateralists need first to acknowledge that their own deals are poisoning its chances.



## Digital publishing

## Google's big book case

Sep 3rd 2009

From The Economist print edition

**The internet giant's plan to create a vast digital library should be given a green light**

Illustration by Peter Schrank



TO ITS opponents, it is a brazen attempt by a crafty monopolist to lock up some of the world's most valuable intellectual property. To its fans, it is a laudable effort by a publicly minded company to unlock a treasure trove of hidden knowledge. Next month an American court will hold a hearing on an agreement, signed last year by Google and representatives of authors and publishers, to make millions of books in America searchable online. The case has stirred up passions, conflict and conspiracy theories worthy of a literary blockbuster.

That is hardly surprising. The proposed agreement, which settles a class-action lawsuit brought against Google and requires the court's approval, represents a novel experiment in transferring words—and an entire business model—from the printed page to the digital realm. If the agreement survives judicial scrutiny it could become a model for the management of digital-book rights in other parts of the world. That is why the European Commission plans to hold its own hearing on September 7th to examine the deal's implications. Google's actions have already been the subject of pointed criticism in Japan, Germany and France, where some publishers and writers reckon it will damage their commercial interests (see [article](#)).

Under the agreement's terms, Google will be free to digitise most books published in America, including those that are out of print. It will then make chunks of text available through its search engine, sell individual e-books, and offer libraries and other institutions subscriptions to its entire database. Google will keep 37% of the resulting revenue and give the rest to a new book-rights registry which will pay copyright holders. Publishers and authors had until September 4th to withdraw from the agreement; those remaining in it can ask Google to remove their titles from its library at any time.

Even critics recognise that the proposed deal offers huge public benefits. By helping to resolve the legal status of many texts subject to absurdly long copyright periods and murky ownership, it will make millions of books more accessible than ever before. Researchers from Manhattan to Mumbai will gain instant access to volumes that would otherwise languish in obscurity. Libraries will be able to offer users access to information far beyond their physical book stacks. And authors and publishers will be able to cash in on long-neglected works.

But critics maintain that the risks outweigh the benefits. They claim it gives Google a dangerous monopoly over digital sales of certain books. And they argue that Google and the registry could act as a cartel and raise the cost of institutional subscriptions to outrageous levels.

## Lost and found

The first fear is overdone. True, the agreement gives Google the exclusive right to scan “orphan” texts—titles for which the copyright owner’s identity or location is unknown. But these books are a relatively small part of the market, and most are unlikely to be of much value. If any are, their appearance in Google’s archives is likely to bring long-lost copyright owners out of the woodwork to claim the proceeds. They can then sell the digital rights to their books to firms other than Google, increasing competition.

The critics’ second charge is more worrying. In effect, the agreement creates a legally sanctioned cartel for digital-book rights that could artificially inflate the price of library subscriptions. In some other areas, such as the music industry, such copyright registries are required to sign formal pledges that they will not abuse their dominant positions in this way. The Google agreement contains no such promise.

Yet that is not a reason to reject it. After all, Google has a big economic incentive to ensure that its online library is widely available: it makes most of its money from search advertising, so the more people that use its services, including the online book archive, the better. It also has a legal incentive to watch its step. The agreement stipulates that institutional subscription prices must be low enough to ensure that the public has “broad access” to digital books, while at the same time earning market rates for copyright owners. So if lots of libraries refuse to sign up for Google’s service because it is too costly, the company could be slapped with a lawsuit.

Admittedly, such safeguards are not watertight and other antitrust concerns could surface over time in this brave new digital world. But the theoretical dangers these pose should be weighed against the very real and substantial benefits that a comprehensive digital library will create. That is why the court should approve the Google agreement, while at the same time giving stern warning to its signatories that they will be subject to intense regulatory scrutiny for the foreseeable future. If the court rejects the deal, much potentially useful information will remain, quite literally, a closed book.

## Electric cars

## Charge!

Sep 3rd 2009

From The Economist print edition

**Carmakers are shifting towards electric vehicles. Policymakers must do their part, too**



GREENS may not like it, but once people have enough to eat and somewhere tolerable to live, their thoughts turn to buying a car. The number of cars in the rich world will grow only slowly in the years ahead, but car ownership elsewhere is about to go into overdrive. Over the next 40 years the global fleet of passenger cars is expected to quadruple to nearly 3 billion. China, which will soon overtake America as the world's biggest car market, could have as many cars on its roads in 2050 as are on the planet today; India's fleet may have multiplied 50-fold. Forecasts of this kind led Carlos Ghosn, boss of the Renault-Nissan alliance, to declare 18 months ago that if the industry did not get on with producing cars with very low or zero emissions, the world would "explode".

Cars already contribute around 10% of the man-made greenhouse gases that are responsible for climate change. In big cities, especially those in fast-developing countries in Asia and Latin America, gridlocked traffic is responsible for health-threatening levels of local air pollution. To its credit (and under increasing pressure from legislators), the car industry is heeding Mr Ghosn's call. Biofuels have fallen out of favour because of concerns that those produced in rich countries are not particularly green; but huge efforts are being made to develop cleaner conventional engines and, at the same time, move beyond them to electric, battery-powered vehicles, which produce fewer emissions even when the generation of the electricity needed to charge them is taken into account.

By the end of next year, in addition to the increasing number of petrol-electric hybrids on offer, it will be possible for the first time to buy proper cars from mainstream manufacturers that are propelled solely by electric motors (see [article](#)). Among them will be Nissan's Leaf and Chevrolet's Volt. The Leaf will rely on battery power alone and will have a range of about 160km (100 miles) before it needs to be plugged in for a fresh charge. The Volt will have a small petrol-engine generator to recharge its batteries on trips of more than 65km. Both are medium-sized cars offering decent performance, practicality and safety—and neither looks off-puttingly weird. Electric cars from other mainstream manufacturers are not far behind.

Problem solved, then? Alas, electric cars still face several roadblocks. The Leaf and the Volt will be expensive, costing around twice as much as comparable petrol-engined cars. That is because of the high cost of batteries, and because other components must be redesigned for electric vehicles. In an industry driven by scale, small volumes lead to high costs. A further problem is that the Volt and the Leaf must be plugged into the mains every night—fine if you have your own garage or driveway, but a bit tricky otherwise. All this could limit the appeal of electric cars to affluent greens living in leafy suburbs.

Carmakers cannot overcome these problems on their own. Governments must also do their part, and not just in order to cut greenhouse-gas emissions. A switch to electric vehicles, along with better public transport, would also reduce choking air pollution in the developing world's megacities. And most governments would prefer to be less dependent on imported oil: no country has embraced electric cars

with more enthusiasm than Israel.

## **Power steering**

Encouraging take-up means shifting the overall cost of ownership to favour cleaner cars over ones powered by fossil fuels. A carbon tax, which would make owning a gas-guzzler more expensive and a zero-emission vehicle more attractive by comparison, would be the best approach, but in its absence, introducing specific taxes linked to pollution levels is a reasonable substitute. Most European countries already have high fuel taxes; elsewhere, they tend to be low, and in some places fuel is subsidised by governments.

Despite short-sighted industry lobbying and occasional squeals of pain from voters, governments are beginning to favour cleaner cars. Regulations penalising vehicle emissions, and thus raising the cost of conventional cars, are tightening. Governments are linking taxes such as vehicle licences and sales taxes to carbon emissions. But plenty more could be done. Road-pricing schemes, congestion charging and discounted town-centre parking could all provide some of the sticks and carrots needed to increase demand for cleaner cars. Finally, governments and city authorities must make it easy for electric utilities and new start-ups to install vast numbers of street-level recharging points and develop “smart” power grids to supply the growing electric fleet without requiring much extra generating capacity. Do all those things and by 2020 electric cars will have become a common sight in cities across the world. Do too little and electric cars may remain little more than a promising niche technology.



## On Italy's south, America's fishing industry, Afghanistan, Ukraine, Edward Kennedy, France's health system, American regions, words

Sep 3rd 2009

From The Economist print edition

### Southern Italy

SIR – You inferred that Italy's government stole funds intended for the south of the country—your term was “raided”—to use for other things (“*The messy mezzogiorno*”, August 15th). I assure you that no such theft has taken place. Southern Italy's backwardness is mostly explained by some local authorities squandering money on unnecessary projects. Public administration is often a substitute for market activity in the *mezzogiorno* and the region needs to become more efficient. After years of frittering away money, the government decided that rather than providing cash without any underlying logic (only to see it wasted, or worse, taken by the Mafia) we would assign funds to serious projects with a guarantee of transparency and legality.

We are striving to make public administration as transparent as possible to every citizen in Italy. Furthermore, we are waging a full-blown war against crime, hitting criminal organisations at the very highest level, arresting important Mafia people, delinquents and fugitives. In short, the south has quite a lot of money and we are developing policies specifically for the region. But remember, the state needs to be efficient if it is to be effective.

Renato Brunetta  
Minister for public administration and innovation  
Rome

### The fishing industry

SIR – Your article on a new United States Geological Survey (USGS) study on mercury in fish ignored basic journalism tenets and unfortunately served to confuse readers about the study rather than inform and educate them. The very start of your article was in error. The headline, “*Hold the sushi*” (August 29th), suggested that the following reporting would in some way refer to fish or seafood used in sushi; it did not. The study does not involve fish used in sushi.

Your article stated that “the fish lobby points out that the USGS findings do not necessarily damn the commercial fish industry.” The USGS study in no way “damns” the commercial fish industry because it in no way relates to the commercial fish industry. The study is clearly about recreational fish found in internal streams—commercial seafood comes from the ocean and aquaculture. To suggest there is an argument about the relevance of this study to commercial seafood is an egregious distortion of the facts and an alarmist attempt to make the study newsworthy.

The only person quoted in your article is allowed to defame the tuna industry. Richard Wiles of the Environmental Working Group claims in your publication that the Food and Drug Administration has “historically been in the pocket of the tuna industry.” This is a false statement that *The Economist* should not allow to go unchallenged.

Gavin Gibbons  
National Fisheries Institute  
McLean, Virginia

### How to win in Afghanistan

SIR – You referred to the inadequate levels of manpower available to NATO in Afghanistan (“*Losing Afghanistan?*”, August 22nd). Yet Gordon Brown regularly asserts that the war in Afghanistan is “vital” to British security. The absolutely fundamental question, both for the British government and for NATO, is

whether defeating the Taliban and establishing a stable democracy in Afghanistan really is indeed a “vital” interest. If it is vital then all NATO members must allocate whatever it takes in manpower, treasure and, primarily, willpower to fulfil this aim. If this means conscription, fine. If it means putting economies on a war footing, so be it.

If, on the other hand, these aims are merely “desirable” rather than vital, then that’s fine too. But politicians with no military experience, who are more concerned with interest rates, credit crunches, house prices and unemployment, should say this and the troop-contributing nations can resign themselves to the steady, long-term attrition of their soldiers committed to an unwinnable war. Increasingly, if disgracefully, this seems to be the line that the British government is inclined to take.

Lieutenant-colonel William Pender (Retired)  
Salisbury, Wiltshire

## **Ukrainian opinion**

SIR – I think your observations about Ukraine’s democracy are sometimes one-sided (“Dear Viktor, you’re dead, love Dmitry”, August 22nd). Although there is a growing popular disillusionment with politicians in both the governing Orange coalition and the opposing Party of Regions, it does not stem from “the version of order projected by Russia’s television channels”, which, you say, “looks increasingly popular”. Rather, the disappointment with political parties is a reflection of the democratic process and the impact of a free media.

Ukrainians’ sober view of politics should not be mistaken for a passive longing for a strong hand. Polls suggest that Ukrainians, although frustrated by today’s politicians, strongly support the independence of their state and are opposed to any form of dependence on Russia. The diversity of opinion should be hailed as evidence that we are overcoming the problems of corruption and weak institutions, rather than as a factor that might lead to Ukraine’s downfall.

Vitaliy Novikov  
Kiev

## **A man for all seasons**

SIR – Lexington’s column on Edward Kennedy did a disservice to the man (August 29th). Although Lexington said that Kennedy ought to be remembered for being “a staggeringly capable legislator”, he then went on to discuss: the aide who drowned in Kennedy’s car; his family; his brothers’ assassinations; his failure to win the 1980 Democratic presidential nomination; his skills as an orator (because of a speech that Lexington asserted was entirely inaccurate); and the “indiscipline of his private life”. Kennedy’s legislative achievements were raised only at the end.

On the signature issue of health insurance, Lexington could only refer to what Kennedy wanted to do, not what he did. He might have mentioned the Health Insurance Portability and Accountability Act of 1996 that Kennedy championed. It gives workers the ability to switch jobs without the worry of being denied insurance for pre-existing conditions, thus increasing mobility in the labour market.

Pete Ballard  
Chicago

SIR – Senator Kennedy’s slanderous attack on Robert Bork was not oratory, it was demagoguery. The fact that Kennedy’s unscrupulous tactics “worked” merely underscores how culpable he was in the recent decline of political discourse into character assassination. I doubt Lexington would have been so glib if it had been a Democratic president’s nominee who had been attacked this way.

Joseph Pinilla  
Bielefeld, Germany

## **The healthy French**

\* SIR – It seems odd that the debate on rationing health-care in America has focused on the British National Health Service, while the French system has been mostly ignored (“Keep it honest”, August 22nd). In France, health care is an odd mix of state-run and private insurance, as well as state-run and privately-run care facilities. French patients retain their choice of primary physician, who, while acting as a gatekeeper in order to limit redundant tests, is not employed by an insurance firm to do so.

Another key feature of the French system is the way it manages severe chronic illnesses (tuberculosis, HIV, etc) that require expensive, long-term treatment. All such diseases are covered 100% by state-run health insurance. This scheme is paid for by payroll deductions from employees and payroll taxes from employers. All people in work and their families enjoy the same benefits, just as all employers face the same liabilities for coverage. No one is discouraged from changing jobs through fear of losing health benefits, nor can ruthless discounters undercut their competition by denying health coverage to their staff.

As the United States has a vibrant private hospital system, I imagine it would be singularly well adapted to something closer to the French model than the British or Canadian one. But of course the mere mention of the word “French” sends some Americans into fits, so I suppose that might be one reason why this has never been suggested.

Michael Eustace Erwin  
Paris

## **Rust never sleeps**

\* SIR – Must the American Midwest always be known by the pejorative term, “rustbelt”, while the South remains the “sunbelt” (“Greening the rustbelt”, August 15th)? Why not call the South the scorching-hot-belt, or the air-conditioning-belt, or California the wildfire-and-earthquake-belt? America’s regions are far more diversified economically and industrially than in the past. Let’s move on.

Paul McKenney  
Ann Arbor, Michigan

## **Touché**

SIR – You criticised Timothy Garton Ash’s editor for lapsing into “self-indulgence” because he allowed the use of the word “proleptic” twice within one book (“Mightier than the sword”, August 22nd). You could level the same criticism at yourselves for using the word “Swiftian” twice, in the review and then within three pages of the same section (“Prawns and other illegal aliens”, August 22nd).

Richard Kelly  
London

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\* Letter appears online only

## Japan's election

## Lost in transition

Sep 3rd 2009 | TOKYO  
From The Economist print edition

Japan's people are trapped in the past. Their new government must help secure them a future

Reuters



EARLIER this year, when Yukio Hatoyama set out to become Japan's next prime minister, he called his campaign advisers and asked them to scrap one of the party's main catchphrases on the grounds that it was too simplistic. The offending slogan was, in Japanese, *seikatsu dai-ichi*, or (less catchily) "your daily life comes first". They begged him not to drop it.

Mariko Fujiwara, of Hakuhodo, the advertising agency advising Mr Hatoyama (pictured above), says the phrase tapped into two of the main concerns gnawing on Japanese voters: their anxiety about their own living standards, and their sense that things around them which they thought "fundamentally Japanese" were falling apart. It was vital, she said, that Mr Hatoyama's Democratic Party of Japan (DPJ) continued to tell voters that it felt their pain. Mr Hatoyama capitulated.

Slogans are two-a-penny in politics. But that one, repeated often in the muggy heat of a gruelling August campaign, goes a long way towards explaining why Japanese voters, whose frustrations have been building up for decades, have finally demolished the crumbling dynasty that has ruled them for the past half-century.

It has taken a long time to screw up the courage. Since Japan's bubble economy burst 20 years ago, the country has suffered economic stagnation, flawed leadership, bureaucratic mismanagement, corruption scandals and stockmarket decline. Throughout it all, except for 11 short months in 1993-94, the Liberal Democratic Party (LDP), in cahoots with big business, bureaucrats and other interests, has clung to power, as it had since it was first elected in full cold-war regalia in 1955.

No longer. In a brutal verdict, the LDP lost almost two-thirds of the seats it had won in the 480-seat lower house of parliament in 2005 (see chart 1). The DPJ won by a landslide, capturing 308 seats, making it the biggest party in both the upper and lower houses (though it may still need the support of various small coalition parties).



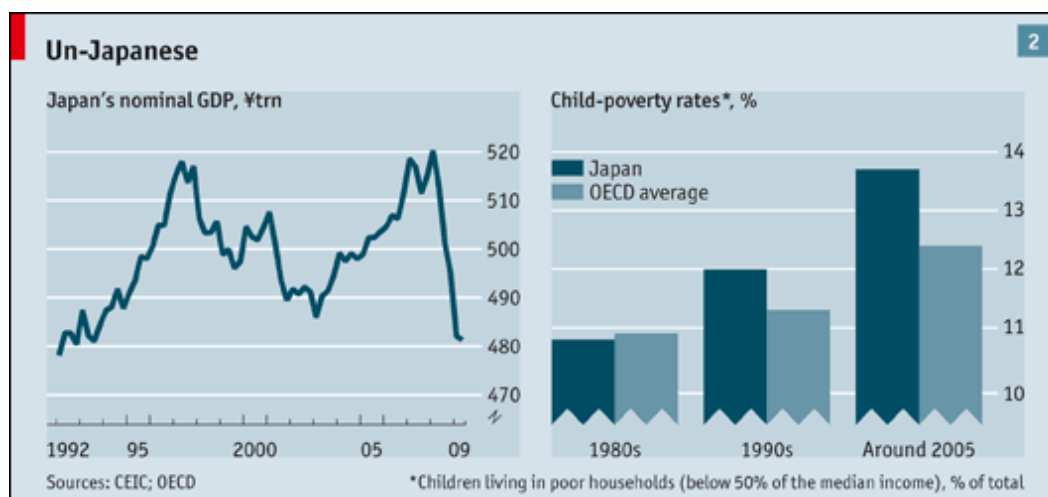
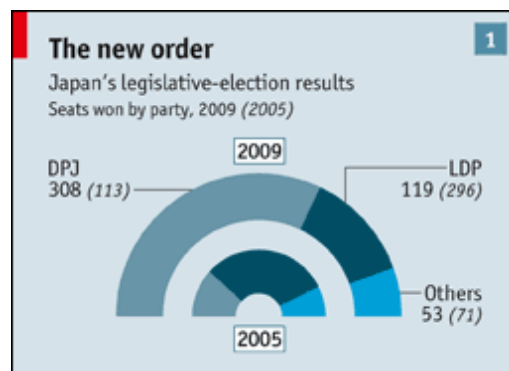
## Rage against the machine

Dozens of LDP stalwarts were swept into retirement. A former prime minister and finance minister lost their jobs. Almost half of those voted in for the DPJ were first-time candidates, with an average age of less than 46. Only one-tenth of those elected for the LDP were new to the job.

The election was an act of political protest. "It was as though an anti-LDP fever gripped the nation," says Gerald Curtis, a veteran campaign watcher and professor of political science at Columbia University. The swing against the LDP was even more startling given the scepticism people felt about the untried DPJ, forged from four former parties that spanned the fiscally conservative to the socialist.

Sunday's poll was the culmination of decades of social change, in which the voters have learnt to see through the LDP's patronage and pork-barrel politics. Instead of roads and bridges to nowhere, they want doctors, nurses and economic opportunity. "It's the end of machine politics," Mr Curtis says.

But something deeper may be afoot, too. By some estimates, the economic crisis this year has, in nominal terms, battered growth as much as the Great Kanto Earthquake, which destroyed much of Tokyo and neighbouring Yokohama in 1923. There are signs of what some call "a collective identity crisis" in Japan. Income disparity, growing numbers of impoverished pensioners and child poverty (see chart 2) clash with a view of their society that the Japanese cherish. Likewise, they look outside their borders and see their country being eclipsed by China, which is enjoying just the sort of boom Japan did from the 1950s to the 1980s.



The great question is whether the DPJ, and society at large, have the appetite to face this insecurity and rebuild a nation that can thrive in a globalised world. Too often, the Japanese are tempted to hark back to the past, when their country was strong and its economy secure. Will the DPJ have the courage in the coming years to map out a future for Japan, or will it cling to weary nostalgia?

To witness what has gone wrong, the Japanese need go no farther than their nearest park. Early in the morning amid the mist rising off the ground, they can find slumbering bodies, heads under open umbrellas, shoes arranged neatly at the foot of a sleeping mat. These are Japan's growing army of homeless: young people thrown out of work in the recent slump and unable to pay their rent; and middle-aged men, some of whom say they cannot bear the shame of bringing their troubles home.

Hamamatsu, a coastal town south-west of Tokyo, has its share of shattered lives. Workers were laid off right down the supply chain almost as soon as home-town outfits like Yamaha and Suzuki saw export orders slump last year. The lay-offs included many Brazilians of Japanese descent, who had flown to Japan because factories needed cheap, part-time labour rather than expensive Japanese workers on full contracts. The jobless Brazilians live with each other if they cannot pay the rent, and the church provides the neediest with food parcels. At a Catholic church recently, they were making soup to share among those, like themselves, eking out the last of their savings. That included homeless Japanese men, who, unlike the Brazilians, cannot face turning to friends or family for shelter.

That unemployed Brazilians are staffing soup kitchens for homeless Japanese is deeply shocking in Japan. It also conflicts sharply with a view of the country held by some Westerners that, despite 20 years of economic stagnation, the Japanese soldier on largely unaffected by the crisis, and have no appetite to reform their economy and society.

Many Japanese do indeed remain proud of the country's economic achievements from the late 1950s onwards, when memories of the crushing poverty and hyperinflation of the immediate post-war years were receding, Japan, under the then youthful, tenacious LDP, embarked on an "income-doubling plan" that was spectacularly successful. The savings rate shot up, providing a pool of money for investment. Consumers made "sacred regalia" of the three essential tools of modern life: the television, washing machine and fridge. Workers made lifelong allegiances to fast-growing start-ups with names like Honda and Sony, and often lived in homes cheaply provided at the company's expense. Since then, the country has clung to the belief that society has become so universally middle-class that class itself has almost become meaningless.

Yet after the boom years of the 1980s degenerated into the lost decade of the 1990s, increasing income inequality, unemployment and social dislocation have begun to tarnish that alluring image. The slump that began late last year has sharply exacerbated the problem, pushing the unemployment rate to 5.7%—low by international standards but a record in Japan. The first to be thrown out of work, as the Brazilians in Hamamatsu attest, are those doing irregular and part-time jobs and earning up to 40% less than those on full contracts. Until the crash, their numbers had steadily climbed, from 16.4% in 1985 to 33.7% in 2007. This has swollen the ranks of an insecure economic underclass.

According to Sawako Shirahase, a sociologist at the University of Tokyo, young Japanese—and especially women—are suffering most. No recent figures capture the effect of the latest slump, but before it started, more than half the female labour force was employed as non-regular workers. Half of the elderly women who live alone have annual income below the ¥2m-a-year (\$21,500) poverty line. Even the marriage rate has fallen—65% of women in their 20s are single. Partly, Ms Shirahase says, that is because they cannot find young men with good enough prospects to start a family.

This creates what some disparagingly call "a winners and losers society". Income disparity can breed a healthy sense of competition. But in a highly regulated economy such as Japan, which does not have free competition and lacks equality of opportunity, inequality can also be hard to escape.

## **The old guard**

For those at the bottom of the income scale, there had always been a last hope: the LDP. For much of its tenure, it could be counted on to provide public-works projects when employment faltered, or to underpin prices for farmers. Those politicians who could persuade the powerful national bureaucrats to dish out the pork in their electoral districts were often treated as local heroes.

But even that has worn thin. Just over a week before the election, farmers in Sekigahara, in central Japan, had every reason to thank the ruling party. They received a brand-new ¥6m rice harvester, with the prefecture's name printed on the side. But all of them are old men, some in their 80s, whose toil is made all the harder because their children long ago left for the brighter lights of the city. Several spoke yearningly of the DPJ's farm policies.

The ability to provide support, whether that meant a feeling of middle-class prosperity or a handout in the nick of time, kept people voting for the LDP time and again. Even so voters began to lose faith in the kind of society such policies had created, says Jeff Kingston, head of Asian studies at Temple University in Tokyo. "A lot of stuff is coming out that tarnishes the image of the LDP and holds up a mirror to the country. People are asking 'Is this the kind of society we want?' The answer is no."

The same may be true when the Japanese look overseas. For much of their history, they have taken comfort from shutting out the world. But that is no longer possible because of globalisation, the geopolitical importance of their neighbourhood, and the likelihood that they may need to bring in more foreign workers as their population shrinks. Japan will soon surrender its position as the world's second-largest economy to China; its large exporters are looking for salvation to Chinese demand, not American consumers.



**Land of the rising sunflower**

Japan will struggle to accommodate the outside world. As borders blur, it has benefited through exports, but its own boundaries remain sacred. In the campaign the DPJ was forced to abandon its plan to start free-trade talks with America, after lobbying from farmers. "Made in Japan" remains a potent symbol to consumers and producers alike; one farming official in central Japan could put precise numbers on the home-grown content of a traditional Japanese breakfast, including rice and seaweed, compared with a Western one with buns and milk: 64% to 15%. But, sadly for him, the Western breakfast is rising in popularity.

The Japanese have so many reasons to resent the LDP that you might think voting it out of office would be cathartic. But on Sunday night horns did not honk and crowds did not gather. Even the DPJ disappointed television crews when it told them that it was not hosting a victory party. (If crowds had gathered they would have been rained on anyway: a passing typhoon drenched Tokyo.) The Topix share index was almost as flat as the mood around town.

That may have partly been because voters have mixed feelings about the DPJ. In opinion polls before the vote, there was as much scepticism about its policy manifesto as there was about the LDP's. But lethargy also infects politics in general. Ask economists, sociologists or businessmen what the government should reform and you are often met with a baleful shrug. Ichiro Shiraki, a successful businessman who employs scores of elderly women in central Japan to wrap seaweed around his company's rice crackers, can see the consequences of ageing all around him. But ask him what the government should do to help and he appears flummoxed. "That's the politicians' job, not mine," he says.

## **Who's the boss**

Such diffidence dates back a long time. As Ms Fujiwara, the advertising executive, puts it, until recently the Japanese held industry, not government, responsible for looking after people; firms provided job security, income and benefits; the government's task was to make sure they stayed in business. "People knew instinctively that as long as the economy took care of them, ideology was something they didn't need to debate," she says.

This has created citizens who vote, but who have little interest in what politicians actually do with power. Masaru Tamamoto, a social commentator, laments the lack of ideological debate among the voting public, and among political parties, too. It is hard to change. He notes that Japan has never had a people's revolution; big changes in history, such as the Meiji restoration of 1868, were top-down affairs led by disgruntled members of the samurai elite. When hard-left protest groups emerged in the 1960s, they were quickly suppressed because of Japan's cold-war relations with the West. The country has also long been immensely proud of its bureaucrats—they, too, date back to the samurai who sheathed their swords and became pen pushers from the 1600s onwards. Until recent scandals over their handling of the pensions system, people tended to defer to them to steer the country correctly.

Such a disengaged voting public carries risks for Japan's future. Mr Curtis, of Columbia University, notes that neither the DPJ nor the LDP enjoys a core group of supporters. That helps explain why voters are so fickle. "If all Japanese politics becomes is a swing from one party to another, you have a situation in which Japan will be in irreversible decline," he says.

So will the DPJ be able to excite voters enough to convince them of the need for change? On the campaign trail, the party looked narrow in its ambitions, preferring chequebook politics to radical policies. It promised child subsidies, free secondary schools and guaranteed minimum pensions—though often without explaining clearly how it would pay for them. Mr Curtis, however, says he expects actual handouts

in the first year to be a lot less than the headline figures promised. He thinks the DPJ's leaders are fiscally more hawkish than the manifesto suggested.

Perhaps the DPJ will be bolder with a second area of policy. The party wants to break the bureaucrats' control over the nation's purse strings by creating a strategy bureau, close to the prime minister's office, to draw up the budget. The bureaucracy is, indeed, in need of reform. Its departments often operate in bunker-like isolation. Problems that range across ministries are therefore rarely solved. The worry is that Mr Hatoyama's government lacks administrative experience; it has only a handful of people who have previously held cabinet office. It cannot afford to alienate its ministries too quickly, not least because it needs their help to implement policy and to pull Japan out of its slump.

Thirdly, the party has pledged over the longer term to reduce the economy's reliance on export industries, which were closely affiliated with the LDP, by spurring domestic demand. This is a worthy goal that the LDP repeatedly failed to achieve. "The whole emphasis on tax policy has been to offer breaks to companies on investment, while the household sector has had mild tax hikes," says Peter Tasker of Arcus Research, a Tokyo-based consultancy. The DPJ has not fully spelt out how it plans to make the shift, however (see [article](#)).

Japan's recent experience of bold economic reform ended badly. One of the most lambasted figures in the election was Junichiro Koizumi, the lion-haired, pro-American who led Japan from 2001 to 2006. He won a landslide victory for the LDP in 2005 promising to privatise the postal service, and made some headway in freeing up the labour market. But the crisis has damaged his legacy. He had told voters that without pain there would be no gain. The way the DPJ portrayed his tenure on the campaign trail, there was plenty of pain but no gain.

## **Out of the wreckage**

However, Mr Koizumi's legacy has not stopped reform-minded politicians in the regions. One of those, until he recently stepped down, was Hiroshi Nakada, mayor of Yokohama, the city adjoining Tokyo, who cut a dashing figure sitting in the foyer of the mayor's office, offering full disclosure of government accounts to his constituents. His approval ratings remained high to the end, even though he cut the city budget. But he, too, worries about his countrymen: "People are confused. Japan has lost a sense of identity."

It is easy to dismiss Japan after so many disappointments—to forget that it still has high savings, low crime, high-tech industries and creative flair. The wonder of Japan is that it sometimes meanders for years, decades, even centuries, and then erupts into a burst of creativity and reinvention. This may be one such moment, when the toppling of a political monolith unleashes hidden depths of civic action. But that will happen only if the DPJ grows bold enough to lead the way.

## Republicans and Democrats in Congress

## Why can't they just get on?

Sep 3rd 2009 | WASHINGTON, DC  
From The Economist print edition

## America harks back to those bipartisan idylls of yore

Illustration by Claudio Munoz



CONGRESS and President Barack Obama return to work in Washington on September 8th, after Labour Day. But a summer of golfing has done nothing to improve the nation's political temper. Democrats and Republicans are in the throes of one of their periodic shouting matches about who is to blame for the gridlock on Capitol Hill and, more broadly, about the merits and flaws of bipartisanship. "Now more than ever," yelled a representative recent headline on salon.com, an online magazine, "bipartisanship is for suckers."

Stoking the liberal side of this debate is Congress's failure to make progress on health-care reform. A cacophony of voices is urging Mr Obama to stop seeking compromise with the Republicans, which seems wasted effort, and use Democratic votes alone to ram his flagship domestic project through Congress. It is not just the netroots who are up in arms: on August 30th an editorial in the *New York Times* concluded "with considerable regret" that the ideological split between the parties was too wide to bridge.

The White House is signalling impatience too. Mr Obama's press spokesman, Robert Gibbs, complained this week that Mike Enzi of Wyoming, one of the three Republicans on the Senate Finance Committee who are supposed to be hammering out a compromise on health with three Democrats in Senator Max Baucus's "gang of six", had "turned over his cards on bipartisanship" and walked away. Mr Gibbs was responding to a radio broadcast in which Mr Enzi had excoriated the Democrats' reform plans. If Mr Gibbs is right, the outlook for bipartisan reform has indeed darkened. The "gang of six" had seemed the likeliest forum to produce a bill that might attract cross-party support in the Senate.

For the moment, however, Mr Obama gives no hint of abandoning his (stated) preference for bipartisan lawmaking on health, climate change and other matters. This dispirits those Democrats who yearned, after eight years of George Bush, for audacious change. These loyalists are dismayed by Mr Obama's recent softening of his insistence that any health reform must include a "public option" (under which private insurers would face competition from a government-run scheme). But Mr Obama's retreat on this suggests that he is not yet convinced by the notion of driving through controversial legislation on



Democratic votes alone, even if he could overcome the doubts of the Democrats' own fiscal conservatives. Weighty calculations of principle, presentation and practical politics lean the other way.

The principle at stake is not only the promise Mr Obama made at his inauguration to transcend "petty grievances" and "worn-out dogmas". Almost every president says something like that. A long-established idea in American politics also holds that big laws—the sort that alter the face of the country—are likelier to endure if they collect support from both parties. That was the thinking behind great bipartisan measures such as the creation of Social Security in 1935 and of Medicare in 1965, the Civil Rights Act of 1964 and—in 1986—the tax reform engineered by Ronald Reagan and his ideological opposite, Speaker Tip O'Neill. Mr Obama says he wants to stop America from being bankrupted by health bills and the planet from frying. Those are causes big enough to make it worth travelling the extra mile to sign up the other party, which will one day return to government.

As for presentation, America has just buried Ted Kennedy, lionised now in a thousand editorials for having been, among other virtuous things, a shining exemplar of bipartisanship. Americans seemed to admire a senator whose firm stand on the left of the Democratic Party did not stop him from making Republican friends and cutting bargains with them in order to make laws—a talent that persuaded a veteran conservative pundit, George Will, to declare him the most consequential Kennedy brother. After a summer of ugly tribal arguments in town-hall meetings on health care, politicians may feel the need to pay lip service, at least, to the idea of bipartisanship.

And yet in the Washington think-tanks the passing of Ted Kennedy has revived a different debate. Is bipartisanship still feasible in today's America? Is it even desirable? Pietro Nivola, a senior fellow at the Brookings Institution, has doubts on both counts. Grand bargains are harder in an age when both parties, but especially the Republicans, have become more ideological and cohesive. Congress no longer contains legions of conservative Democrats from the South or moderate Republicans from the north-east willing to make common cause—or laws. The gerrymandering of electoral districts has slashed the number of swing seats, forcing candidates to nurture their wild-eyed base, rather than reach out to moderates, to win their primaries. Religious polarisation has sharpened the gap between the parties, sucking believers into the Republican camp and driving the secular to the Democrats.

During the raucous fight over health care, Democrats have affected particular indignation over the remark in July of a Republican senator, Jim DeMint of South Carolina, that "if we're able to stop Obama on this, it will be his Waterloo. It will break him." How very non-bipartisan. And yet nothing could be more natural than for an opposition to scheme to thwart the governing party. Mr Nivola argues that rather than wringing their hands, Americans should welcome the fact that their parties have become aggressively opposed. "As in Europe," he says, "the majority rules and the minority has to bide its time." This produces clearer choices for voters and makes it easier to hold governments to account. Nothing wrong with that.

Unless, perhaps, you are the one who is going to be held to account. As anxious Democrats resume work next week, even his allies admit that Mr Obama has had a torrid summer. His approval rating has fallen from about 70% at the time of his inauguration to around 50%. Independents in particular seem to be losing faith. Health-care reform has taken a bashing. By mid-August only 46% of Americans approved of Mr Obama's handling of it, down from 57% at the end of April. Americans understandably doubt whether any of the bills before Congress can cut costs and extend coverage at the same time. If health reform fails, energy legislation will falter too.

These are not circumstances in which Mr Obama will rush to heed the advice of those who want the Democrats to go it alone. White House aides say only that when the president returns to work he will be "very active". He is scheduled to address a joint session of Congress on health care next Wednesday. As for the public option, it seems that he will still not insist on it if that puts off Republicans. Besides, if there is comfort for the president in the polls, it is last month's finding by the Pew Research Centre that a growing proportion of Americans (29%) blame the Republican leadership rather than Mr Obama (17%) for their failure to work together. If nothing else, bipartisanship has always been an excellent way for presidents to spread the blame in case things go wrong.



## Ted Kennedy's Senate successor

### Can the dream live on?

Sep 3rd 2009 | BOSTON  
From The Economist print edition

#### An eager surge of politicking hits both Beacon Hill and Capitol Hill



Twilight for the clan, perhaps

TOWERING over a highway near Boston's Logan airport is a giant billboard of Ted Kennedy with his words from the 2008 Democratic convention, "The dream lives on". The Commonwealth of Massachusetts is trying to decide who should carry on that dream.

State Democrats are positively salivating over their first chance in 25 years to represent their state in the Senate. Massachusetts last had an open seat in 1984, when Paul Tsongas decided not to run for re-election. John Kerry won his seat and has held on to it tightly. Deval Patrick, the governor, announced this week that a special election will be held on January 19th.

So far only Martha Coakley, the state's attorney-general, has collected the necessary papers. Curt Schilling, an outspoken former player for the Red Sox, has expressed interest. Many other potential candidates, including Ed Markey, a powerful congressman, are waiting to see what the Kennedys will do. Joe Kennedy, a former congressman and Robert Kennedy's oldest son, is said to be considering running, but people close to him doubt he will. He heads an energy company that provides affordable heat to poor families, and is said to be content. Some are looking at Ted Kennedy's oldest son, Teddy junior, who gave the best eulogy at his father's funeral mass. But he is unlikely to run either. Victoria Reggie, Mr Kennedy's widow, is mentioned too, but has demurred so far.

Only five states, including Massachusetts, fill Senate vacancies by special election. In most, the governor does it. (Florida's governor, Charlie Crist, appointed his former chief of staff to Mel Martinez's vacant seat on August 28th). Recent disasters suggest that such appointments give too much power to the governor and too little to voters. In Illinois, a governor tried to sell an empty Senate seat. In New York, David Paterson's twistings over Hillary Clinton's old seat involved flirting with giving it to Caroline Kennedy, John Kennedy's politically inexperienced daughter.

Massachusetts changed its law in 2004, when Mr Kerry was running for president. The heavily Democratic state legislature did not want Mitt Romney, then governor, to appoint a fellow Republican to Mr Kerry's seat if he won the election. It now requires special elections to fill empty Senate seats within 145-160 days of a vacancy. That is hardly speedy. Days before he died, Mr Kennedy told state leaders that it was "vital for this Commonwealth to have two voices" in the Senate during the five months between the vacancy and the election. It was also vital, from Mr Kennedy's point of view, to give Barack Obama his 60th vote to maintain a filibuster-proof majority to protect health-care reform.

Mr Kennedy requested that the state law should be amended to provide a temporary appointment by the governor until the special election. (Michael Dukakis, who ran as a decent but nerdy Democratic presidential candidate in 1988, is most often mentioned for the caretaker position.) Harry Reid, the

Democratic leader in the Senate, is pressing Massachusetts lawmakers to give Mr Patrick power to make the appointment. A growing number seem inclined to, though some are still reluctant. Richard Parker, of the Kennedy School of Government, describes the process on Beacon Hill as “exquisitely delicate”.

Though the state is overwhelmingly Democratic, it is really a three-party state. “You got your Republicans, your Democrats and your Kennedys,” observes Thomas Whalen of Boston University. With Ted Kennedy gone, the Bay State will lose much of its clout in Washington. But not for ever: Mr Kennedy’s 11-year-old grandson has already announced his candidacy for the Senate in 2044.

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## The Virginia governor's race

### Sins of the student

Sep 3rd 2009 | RICHMOND  
From The Economist print edition

#### A dog-eared thesis trips up the Republican candidate

SOMETIMES it seems that the candidates for governor of Virginia aren't running against each other. They're running away from other people. The Democratic candidate, Creigh Deeds, is fleeing from Barack Obama and his health-care plan. His Republican rival, Bob McDonnell, is hectically distancing himself from—well, himself.

Over more than two decades in public life, Mr McDonnell has been a reliable social and religious conservative. He successfully diverted attention from his flinty views by playing to voters' worries about the economy and too much change in Washington. At one point he held a double-digit lead in the polls. Mr Deeds struggled to compete with him—until, at the end of August, he was handed a gift by the candidate himself.

It came in the form of a long-forgotten 1989 graduate thesis. Mr McDonnell made the mistake of mentioning its existence to the *Washington Post*; the paper lost no time in splashing it. Its tone is not going down well in the Washington suburbs, where many of Virginia's voters live.

The younger Mr McDonnell—he was 34 then, and a law student at a university founded by Pat Robertson, a conservative televangelist—wrote that working women were "detrimental" to families. Public policy, he thought, should be weighted towards married couples rather than "cohabitators, homosexuals and fornicators". He also complained that a federal court edict legalising the use of contraception by unmarried couples was "illogical".

As a lawmaker and, later, Virginia's attorney-general, Mr McDonnell did not forget his research paper. He clamped down on abortion, resisted anti-discrimination protections for gay public employees and aligned the state government with breakaway Episcopal parishes after the appointment of an openly gay bishop. Now, however, he is in hot-disavowal mode. He says he supports working women: his wife has had jobs, and their eldest daughter works for a defence contractor. Mr McDonnell also avers that he would not consider sexual orientation in government hiring.

His professed conversion was apparently meant to soothe independents. But it may rattle the Republican base. Patrick McSweeney, a former state party chairman, told the *Post* that Mr McDonnell risks losing votes for retracting his previous views. He can't win.

Mr Deeds, backed by the Democratic National Committee, is fanning the fire with glee. He intends first to reduce Mr McDonnell to a caricature, and then to shift the campaign's focus to issues on which a governor can actually make a difference: transport, education and public safety. His problem, however, is that his support of such programmes hinges on his endorsement of a giant tax increase in 2004—and the possibility of another, if he is elected. Voters do not care to be reminded of that in the depths of a recession.

Mr Deeds, a country lawyer, sometimes seems out of step with his party because of, among other things, his pro-gun stance. He was the surprise victor in a three-way primary in June, taking about 50% of the vote. But his post-primary bump quickly faded, overshadowed by buyer's remorse over Mr Obama. Though he carried the state—the first Democratic presidential candidate to do so in 44 years—with almost 53% of the vote, Mr Obama's approval rating in Virginia is now about 42%. That may prove a tougher obstacle to overcome than a dog-eared dissertation.

## The Jaycee Dugard kidnapping

### A tragedy of errors

Sep 3rd 2009 | WASHINGTON, DC  
From The Economist print edition

#### A horrible case shows the need for competent policing

WHEN Barack Obama was running for the Senate, an adviser showed him a file of damaging facts that Republicans had dug up about him. One was that he had voted against a bill "to protect our children from sex offenders". "Wait a minute," said Mr Obama. "I accidentally pressed the wrong button on that bill. I meant to vote aye, and had it immediately corrected in the official record." His adviser smiled: "Somehow I don't think that portion of the official record will make it into a Republican ad."

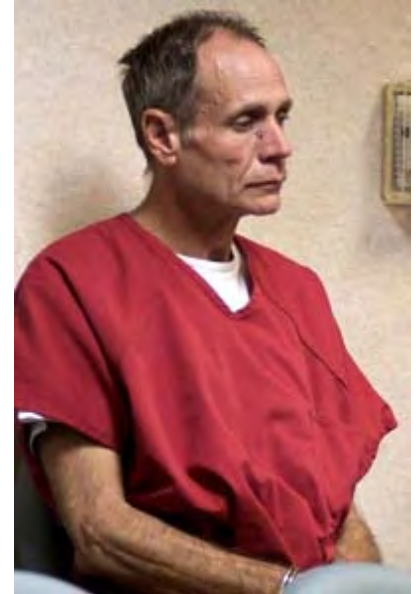
Few issues are more politically toxic than child rape. Which is why the tragedy of Jaycee Dugard may have political consequences. Miss Dugard disappeared in 1991, when she was 11. Her stepfather saw her being bundled into a car. A well-publicised hunt turned up no clues. The trail went cold. But at the end of August she was found living in a warren of tents and sheds in a convicted rapist's overgrown back yard in Antioch, California. She has two daughters. Prosecutors say her alleged abductor, Phillip Garrido, is the father. He and his wife, Nancy Garrido, face 29 charges, including rape and kidnapping.

Mr Garrido is no stranger to the law. In 1977 he earned a 50-year sentence for kidnapping and raping a woman in Nevada. Yet he was released after only 11 years. He moved to California, where he was put on a registry of sex offenders. Parole officers visited him regularly, but none noticed that he was keeping prisoners in his back yard. In 2006 a neighbour called the police to complain that he was "psychotic and had a sexual addiction" and that there were children living in his rubbish-piled, ramshackle garden. A policeman came to his house, but did not look behind it. Last year, a task force that checks up on sex offenders paid Mr Garrido a surprise visit and searched every room of his house. But they, too, omitted to look outside.

Why did it take so long to find Miss Dugard? The main reason appears to be simple human error. That said, it perhaps did not help that California registers so many people as sex offenders—63,000, including many convicted of relatively minor offences—that it is hard to keep track of the most dangerous predators. A local sheriff told the *Los Angeles Times* that his station was responsible for about 350 sex offenders, "349 more than the number of detectives I have dedicated to monitoring these people."

But the conclusion many voters will draw is that the system is too soft on crime. The furore may have prompted California's lawmakers to scale back a plan to save money and ease the chronic overcrowding in the state's prisons by releasing some non-violent prisoners early. A bill passed on August 31st would release fewer prisoners than the 27,000 originally planned, but was still derided by Republicans as a "state-sanctioned jailbreak".

Reuters



**No one looked in Garrido's back yard**

## The Juanes row in Miami

### If music be the food of love...

Sep 3rd 2009 | MIAMI  
From The Economist print edition

#### Arguments for, and against, a Colombian rock star playing in Havana

Reuters



HE IS young, dark and handsome, with a lilting light tenor, and he swept the Latin Grammys last year. But should Juan Esteban Aristizábal, better known as Juanes, perform his songs at a “peace concert” in Havana? The debate over the Colombian rock star, who is based in Miami, has now been raging for a month or more on the city’s Spanish-language radio and TV shows.

Older Cuban-Americans, *los históricos* as they call themselves, who left Cuba in the immediate aftermath of the 1959 revolution led by Fidel Castro, vehemently oppose the concert. They argue that it is just the latest attempt by the Cuban regime to manipulate public opinion. Traditionally, these older exiles have exercised all the political clout in Miami. But younger ones are pushing back, especially when it comes to the arts. A recent poll by the Cuba Study Group, a Cuban-American business association based in Washington, DC, found that while 62% of Cuban-Americans aged 65 and over oppose the concert, only 25% of those aged 34 and under do.

“For many of our generation, it’s just not an issue,” says Felice Gorordo. Mr Gorordo, who is 26, is the co-founder of Roots of Hope, a 3,000-strong Miami-based youth movement that seeks to bring Cubans on both sides of the Florida Strait closer together. “A lot of our members say, ‘Let him go and we’ll judge when he comes back. It’s worth a shot’.”

The Juanes concert, planned for September 20th, is seen by some as a potential watershed in United States-Cuban relations. A successful outcome could smooth the way for a further softening in American policy. Already the Obama administration has eased some restrictions on travel, remittances and telecoms links, and more changes could follow. Talks about migration were resumed recently after a six-year hiatus, and the two sides are also discussing the resumption of direct postal services. Juanes received the official blessing of the Obama administration before announcing the concert (Hillary Clinton even posed, glowing, for a photo with him). So some of the ice may be melting. The New York Philharmonic Orchestra is also considering an invitation to perform in Cuba next month.

Artists have attempted this kind of bridge-building with Cuba before. The last effort, in 1999, featured left-leaning musicians such as Bonnie Raitt, as well as members of Fleetwood Mac and The Police. But no one at the height of their career, and especially with Juanes’s Latin star-power, has taken the risk. Juanes has sold millions of records in recent years, and is also widely admired for his humanitarian work in Colombia. “This is not about politics,” he told the *Miami Herald*. “Our only message is one of peace, of humanitarianism, of tolerance, a message of interacting with the people.” Roots of Hope’s leaders, who have held long meetings with him, say this is a message they share.

But exiles insist it is the height of naïveté to ignore the political significance of such a concert. Cuba is

experiencing a long, hot summer in the midst of its worst economic crisis in more than a decade, and there is nothing the regime would like more than to give Havana's frustrated young people a bit of free entertainment.

Juanes has also pleaded ignorance about the political actions of some of the Cuban artists he has invited on stage, including the legendary *trovador* (balladeer) Silvio Rodríguez, a former member of the Cuban National Assembly. Both Mr Rodríguez and another Cuban artist scheduled to perform, Amaury Pérez, signed a letter supporting the execution of three young black Cubans who hijacked a ferry in a vain effort to flee the island in 2003.

In his defence, Juanes says there will be no restrictions on who can attend. The outdoor setting, in the spacious Revolution Plaza, could attract as many as 600,000 people, a number even the Cuban government would find hard to control. To avoid performing in front of a controversial image of Che Guevara or the offices of the Cuban Communist party, which dominate two ends of the plaza, the stage will be erected in front of the National Library, a neutral backdrop where Pope John Paul II said mass, and called for freedom, in 1998.

Supporters of the concert say Juanes's voice will be welcome relief from the monotonous political monologue of Cuba's Jurassic leaders. "Nobody has the right to deprive us Cubans on the island of what they enjoy quite naturally abroad. Our local totalitarianism is more than enough," says Miriam Leiva, a dissident journalist in Cuba. Juanes will have a hard time matching the pope. But, as the younger exiles say, it's worth a shot.



## Gambling in Florida

### Indian gold

Sep 3rd 2009 | TAMPA  
From The Economist print edition

#### A new pact is negotiated with the Seminole tribe



Crist really needs that money

CHARLIE CRIST, Florida's governor, first tried to make a gambling pact with the Seminole tribe in late 2007. It seemed a good idea if some of the money they took in from their seven casinos—which Indian tribes, as sovereign powers, may run on their reservations—was earmarked for the state. However, he forgot to consult the legislature before he signed the papers; and the state Supreme Court, taking the miffed lawmakers' side, nullified the pact the next year.

Since then, recession has bitten Florida as hard as anywhere, and the casino revenues have come to seem even more desirable. So a second version of the pact was signed by the governor on August 31st, just hours before a deadline imposed by the legislature. This one will last 20 years, rather than the original 25, and the Seminole will pay Florida a minimum of \$12.5m a month for 30 months, or \$375m in all.

Most of the money will go to the state's education system, from kindergarten classes up to state universities. For that reason, lawmakers are highly likely to pass the pact this time. Erik Eikenberg, Mr Crist's chief of staff, who helped to negotiate the second pact, points out that the new agreement will create an extra 45,000 jobs, "which would be welcome in an economy that is looking for money". It will also put an estimated \$6.8 billion into Florida's economy over the next 20 years.

Yet the money is far from secure. Lawmakers are worried about how they will regulate the tribal casinos internally. The Seminole have won the concession that the Department of Revenue, which has no experience whatever of policing gambling, should have oversight of the casinos. "The tribe shouldn't tell us where and how to investigate," says Bill Galvano, who headed the Florida House's negotiating team.

Another possible deal-breaker, according to Mr Galvano, is that the second compact would ban any expansion of so-called Class II and Class III games (such as blackjack tables, electronic bingo and slot machines) outside the Florida casinos which the Seminoles operate. Several Florida horse- and dog-tracks had been hoping to introduce slot machines in places well away from the casinos.

The Seminole have been trying for over 20 years to make some sort of agreement with the state. They are optimistic about this one. Committee hearings on the new pact will begin in October. But as the process will take weeks to complete, and as the chances of rejection are still fairly high, it appears that both the state government and Floridians will have to wait a good deal longer for their money.

## The Mark Sanford soap opera

### Five hundred more days?

Sep 3rd 2009 | COLUMBIA, SOUTH CAROLINA  
From The Economist print edition

#### The drive to replace South Carolina's governor is accelerating

MARK SANFORD is a man alone these days. The Argentine lover whom he calls his "soul mate" still seems to be in Argentina. His wife Jenny, after telling *Vogue* magazine that her husband was having a "midlife crisis", has left the governor's mansion, taking the couple's four sons with her. Democrats have launched a petition drive to rid the state of Mr Sanford, with one Democratic candidate for governor putting out an entertaining video. As a lovesick couple strolls on the sand, and a warden scans the Appalachians for signs of the wandering governor, South Carolinians are urged to sign the petition or face "500 [More] Days of Sanford".

Most of his fellow Republicans, too, have made it clear they want the governor to go quietly. On August 26th his own lieutenant-governor asked him, publicly, to resign. If he refuses he could face impeachment proceedings, probably in January but possibly sooner.

It is not only the sex scandal that is bringing the talk of impeachment to a boil. It is also outrage over press revelations that Mr Sanford, an unbending fiscal conservative who tried to stop \$700m in federal stimulus money from reaching South Carolina, and who famously directed state employees to use both sides of Post-it notes, used state planes both for personal trips (to get a haircut) and political ones, which is prohibited by state law.

He also charged taxpayers for first-class and business-class flights abroad, though state law requires him to travel as cheaply as possible when using commercial aircraft. "If you're going to step straight into business meetings that have significant economic consequence for the people of our state," Mr Sanford explained, "you need to have gotten some level of sleep the night before." The state ethics commission is now investigating.

The governor has rejected all calls to step down. Instead he is stepping up travel around the state, asking forgiveness for his lapses and announcing that his priority is now to restructure state government. All this when South Carolina's unemployment rate was 11.8% in July, the sixth-highest in the country.

The governor, who was once considered a likely presidential contender in 2012, says he does not intend to run for any other political post once his term expires in January 2011. No one is begging him to change his mind.

## Lexington

## The politics of death

Sep 3rd 2009

From The Economist print edition

## Americans fear health reform because they fear the Reaper

Illustration by Peter Schrank



THE first patient Dr Sherwin Nuland ever treated died horribly in front of him. James McCarty, a 52-year-old construction boss, had eaten too much red meat, smoked too many Camels and suffered a heart attack. Dr Nuland, then but a student, was asked to keep an eye on him while he recuperated. Suddenly, McCarty threw his head back, bellowed out a wordless roar and hit his own chest with balled fists. His face turned purple, his eyes bulged out of his head, he took "an immensely long gurgling breath"—and he died. Since this was half a century ago, Dr Nuland did what the textbooks then recommended. He cut open his patient's chest and tried, unsuccessfully, to massage his heart back to life with his bare hands. It felt like "a wet, jellylike bag of hyperactive worms". And it did no good. The "dead McCarty... threw back his head once more [and gave] a dreadful rasping whoop that sounded like the hounds of hell were barking."

That story is one of several that make up "How We Die", a book Dr Nuland wrote in 1993, after a lifetime of watching the effects of terminal illness. Because modern life is so clean and orderly, he argued, people expect to die with dignity. But this may be wishful thinking: death can be dirty, ugly and often involves the "disintegration of the dying person's humanity". Despite its gloominess, "How We Die" was a huge success, because it addressed with excruciating honesty mankind's greatest fear.

The current debate about health-care reform is in part a debate about death, which is why it evokes such fear. Some of this fear is absurd. Outside a town-hall meeting in Reston, Virginia, last week, a few buffoons likened Barack Obama to Hitler. But most of the protesters are sane. Mr Obama plans to cover millions of uninsured people, says Brittany Tomaino, a young would-be oncologist. He will have to find the money somewhere. That means cuts to Medicare, the government health plan for the elderly, which covers her 95-year-old grandfather, she reckons. "If he needs care, they're going to give it to someone younger," she predicts.

A slim majority of Americans support Obamacare. But that majority is declining, and the passion is mostly on the other side. Pro-lifers, for example, worry that reform will mean taxpayer-funded abortions. Half of all Americans believe this will happen. Democrats point out that the bills in question do not mention abortion. Pro-lifers respond that the language is vague enough to allow bureaucrats to add abortion funding after the bill is passed. They also fret, like Ms Tomaino, that Mr Obama will deny life-saving treatment to Grandpa to save money. This possibility alarms Grandpa, too. Americans over 65 currently receive, through Medicare, fantastically generous health insurance for which they pay only a small fraction

of the cost. Only 23% of them think Obamacare will make them better off, while a growing plurality think it will hurt them.

Health reformers always smash up against two unpalatable truths. We are all going to die. And the demand for interventions that might postpone that day far outstrips the supply. No politician would be caught dead admitting this, of course: most promise that all will receive whatever is medically necessary. But what does that mean? Should doctors seek to save the largest number of lives, or the largest number of years of life? Even in America, resources are finite. No one doubts that \$1,000 to save the life of a child is money well spent. But what about \$1m to prolong a terminally ill patient's painful life by a week? Also, who should pay?

There are no easy answers. Unfortunately for Mr Obama, some of his academic chums have pondered seriously and publicly about the questions. Cass Sunstein, an adviser, has written extensively about which life-saving rules are most cost-effective. Ezekiel Emanuel, a doctor whose brother is Mr Obama's chief of staff, wrote a paper for the *Lancet*, a medical journal, in which he proposed a system for determining who should be first in line for such things as liver transplants or vaccines during an epidemic. Among other factors, he suggested taking age into account, with adolescents and young adults getting priority, because they have fully developed personalities and many years of life ahead. This may be philosophically defensible, but it is political poison—Dr Emanuel even included a graph showing voters above and below the ideal age how much less their lives are worth. Conservative talk radio predictably dubbed him “Dr Death”. Republicans vowed last week to outlaw the rationing of care by age.

## **Blithe and distrustful**

Mr Obama's supporters say that objections to his reforms are largely based on misunderstanding, fuelled by Republican scaremongering. They have a point. But the Democrats' bigger problem is that most Americans have pretty good health insurance and no idea how much it costs. Taxpayers foot the bill for the old. Most workers with employer-provided health insurance imagine that their employer is paying for it, when in fact it comes out of their wages. Soaring medical inflation depresses Americans' standard of living and threatens to bust the budget. The system is riddled with waste. Yet most Americans feel little urge to make it more efficient. When asked if insurance firms should be obliged to pay for expensive treatments that have not been proved more effective than a cheaper alternative, 56% say yes.

Few Americans have a clear idea how Obamacare will affect them—unsurprisingly, since even quite basic details are undecided. The uninsured have the most to gain, but they are only 15% of the population. Everyone else has something to lose. Many Americans do not trust the government to do anything much, let alone make decisions about life and death. Small wonder Mr Obama finds the headwind against health reform so blustery.

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## Brazil's oil policy

## Preparing to spend a "millionaire ticket" from offshore

Sep 3rd 2009 | SÃO PAULO  
From The Economist print edition

The government has unveiled plans to give the state the lion's share of the money from vast new oil discoveries. Will this wealth be invested or squandered?

Illustration by S. Kambayashi



BY TRADITION Brazil invests little and saves less. Brazilians like to borrow and spend, and *ao inferno* with the future. This may be a legacy of stubbornly high inflation for most of the second half of the 20th century. It may also be an inheritance from further back. Eduardo Giannetti, an economist and philosopher, thinks that the Brazilian ethnic mixture of indigenous nomads, Portuguese settlers seeking a quick fortune and Africans brought to the country in chains bequeathed an entrenched habit of spending now and saving some other time. Whatever the cause, the discovery in 2007 of potentially vast new offshore oil deposits deep beneath the Atlantic seabed will be a crucial test of Brazil's moral fibre: depending on how it is used, this new wealth could help the country overcome poverty and underdevelopment, or exaggerate its spendthrift ways.

After almost two years in which his government has pondered the question, on August 31st President Luiz Inácio Lula da Silva unveiled four new bills setting out how the windfall should be gathered and spent. His rhetoric on what he called "independence day" was triumphalist. The oil deposits were "a gift from God," "a millionaire ticket" and "a passport to the future." But he also pointed to the problems that oil has caused some economies, and explained how Brazil plans to avoid them. The bills, which have to be approved by Congress, will not affect existing exploration and development contracts held by Petrobras, the state-controlled oil company, and five foreign oil companies. These contracts govern parts of the Tupi field, which contains between 5 billion and 8 billion barrels of oil. But plenty of oil and gas would fall under the new laws. Officials believe that in all, there may be up to 50 billion barrels of oil and gas offshore—enough to turn Brazil into an oil giant.

One bill declares the oil in the new fields—dubbed *pré-sal* because they lie beneath a shifting layer of salt—the property of the state, rather than of the companies that buy concessions. In each block, half of any oil produced would go to the state. The remaining half would be subject to a production-sharing agreement between Petrobras and any companies that partnered it, in proportion to their costs. Another bill creates a new state oil company called Petrosal to represent the state's interests in each block. In

theory this will be a small entity, staffed by technicians. In practice it may swell, particularly if it is controlled by politicians, as they may stuff it with supporters. The state will also inject the monetary equivalent of 5 billion barrels of oil into Petrobras, with the aim of ensuring it has the financial muscle to remain the dominant operator. Since 60% of Petrobras's shares are traded on the market, this capital boost will dilute existing shareholders. The company's share price fell sharply on the day of the announcement, wiping \$7 billion from its market value. In addition, the government plans to set up a social fund to spend Petrosal's billions.

Officials have argued that the discovery of so much oil in the Tupi field has eliminated geological risk. That, they say, merits guaranteeing the state a fatter slice of the revenues. But this could have been done by tweaking the existing arrangements, for example to impose a higher royalty. The *pré-sal* fields are technologically complex and expensive to develop. Two recent wells, one drilled by Britain's BG Group and the other by America's Exxon Mobil, proved dry. Some industry experts question the decision to scrap the current rules in which concessions are overseen by the National Petroleum Agency (ANP). "You have a system that has worked well for ten years and is transparent, in a country that often has problems with corruption in public works projects," says Marilda Rosado, a former director of both the ANP and Petrobras and currently a partner in a Rio law firm, "and you decide to scrap it?"

The reason for doing so, according to Mauricio Tolmasquim, head of the state-run Energy Research Company (EPE), is to give the government more control over the oil business. EPE looked at the regulatory regimes in the 20 countries with the biggest oil reserves. Only three—the United States, Canada and Brazil—operate a pure concession system with minimal state involvement, it found. The new set-up, says Mr Tolmasquim, would allow the government to take things such as the exchange rate into account when it takes decisions on exploration.

Even if Congress heeds Lula's plea to act speedily, it cannot approve the bills until December. In practice, they may become bogged down by wrangling. One of the new measures reduces the share of oil revenues that go to the states and municipalities closest to the fields, aiming to spread the wealth more widely. That is reasonable but will face political resistance. José Serra, the governor of São Paulo and the man opinion polls tip to succeed Lula in a presidential election next year, has urged Congress not to rush. The government spent 22 months coming up with its proposals, so congress and society should also be given time to debate them, he says. It would certainly suit his campaign if they did. Conversely, the electoral chances of Dilma Rousseff, Lula's chosen candidate, might be boosted by speedy approval.

There are still many details to be sorted out. The proposed social fund was originally conceived as being earmarked for education and infrastructure spending. It was supposed to be inspired by Norway's oil fund, most of which is saved. Now its mandate has spread to the environment, culture and even the financing of new industries. The worry is that the money will be spent today rather than saved or invested, further bloating a state whose revenue is already equivalent to 36% of GDP, compared to 20% in Mexico.

Of course, these are nice problems to have. And Brazil is better placed to deal with them than many other countries. Still, as Lula pointed out, what looks like a winning lottery ticket can all too easily become a curse. Anyone who has been following the recent corruption scandals in Brazil's Congress will know that such a disaster is well within the powers of the country's lawmakers.



## Venezuela's oil policy

### A sticky proposition

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From The Economist print edition

#### Take a tiny bit of it, or leave it

IN A world in which oil is scarcer, the 272 billion barrels of heavy crude that Venezuela reckons are contained in the oil sands of its Orinoco basin ought to seem like a more attractive proposition to multinationals and state oil firms alike. Yet three times this year Petr leos de Venezuela (PDVSA), the state oil company, has postponed bidding for seven blocks in the Orinoco which officials think would yield 1m barrels per day of synthetic oil. The reason: the terms on offer are even stiffer than those being contemplated by Brazil's government (see [article](#)), and the uncertainty is even greater.

The risk is not geological. Everyone knows where the oil is. The upgrading and refining facilities required to turn tar to oil cost billions of dollars, but the technology is tried and tested. Environmentalists, so vocal about Canada's tar sands (see [article](#)), have so far been silent over Venezuela's bitumen.

It does not help that PDVSA wants a 60% share and operational control in each block while not putting up any money. On top of that the government will take a 33% royalty and a windfall tax. Even so, state-owned oil firms from China, Russia and India have expressed interest in the blocks, along with Brazil's Petrobras and multinationals such as BP, Chevron, Royal Dutch Shell and Total. Two things have prompted them to hesitate, says Michelle Billig of Pira Energy, a consultancy. The first is the world recession and the fall in the oil price—factors that lay behind disappointing bidding rounds in Algeria and Iraq earlier this year. The second is political risk.

Over the past two years Venezuela's president, Hugo Ch vez, has nationalised large parts of the economy, including dozens of oil-service companies (which are still awaiting promised compensation). Two oil giants—Exxon Mobil and ConocoPhillips—are mired in arbitration over government changes to their contracts for their operations in the Orinoco belt. The proposed new contracts contain no provision for arbitrating disputes.

Such is the thirst for oil that some companies, especially state-owned ones from countries, such as Russia and China whose governments are friendly to Mr Ch vez, may eventually hold their noses and dive into the Orinoco's sticky sands.



## Term limits in Colombia

## Closer to Uribe 3.0

Sep 3rd 2009 | BOGOTÁ  
From The Economist print edition

## But the courts could still block it

DESPITE being holed up with swine flu, Colombia's president, Álvaro Uribe had reason to celebrate this week. After weeks of manoeuvring, the lower house of Congress approved the final text of a law to call a referendum on changing the constitution to allow Mr Uribe to run for a third consecutive term—an unprecedented abandonment of term limits in a country that until recently was zealously mistrustful of executive power.

That is tribute to Mr Uribe's extraordinary popularity among Colombians, most of whom see him as their saviour from decades of mounting guerrilla and paramilitary violence. But even though the measure has surmounted its final legislative hurdle, it remains uncertain whether Mr Uribe will in fact be a candidate in the election due next May.

Before a referendum can be held, the Constitutional Court must review both the text of the law and the procedures by which it was passed. Both are open to question. Though the court's current justices have shown themselves generally sympathetic to Mr Uribe (who nominated a third of them), on such an important issue they may well show independence. Questions have been raised over the financing of the petition campaign with which the re-election drive began. The ambiguous wording of the referendum question was changed during the bill's passage through Congress to make it clear that Mr Uribe could run in 2010, rather than having to wait four years.

In addition, opposition legislators claim that officials offered political favours to members of Congress in exchange for their votes in the referendum bill. On the same day the bill was approved, the Supreme Court issued an arrest warrant against a senator who is charged with receiving favours from officials in 2004, when Congress approved a similar constitutional change which allowed Mr Uribe to stand for a second term. The Congress itself is tarnished: more than two dozen former members of the president's legislative coalition are under arrest because of their links to paramilitaries.

Opponents' biggest worry is that if Mr Uribe wins a third term the thinning lines that separate branches of government in Colombia would vanish altogether. In allowing the 2004 re-election amendment, the Constitutional Court said two consecutive terms were not a threat to the separation of powers. But three might be. Opponents point to the example set by Hugo Chávez in Venezuela, who has secured the abolition of all term limits and has eviscerated the independence of the judiciary and local government. Mr Uribe's supporters retort that, unlike Mr Chávez, their man is a democrat.

Another obstacle is the timetable. If the court tarries over its judgment, there might not be enough time to organise a referendum even if one is allowed. The electoral law requires Mr Uribe to declare his candidacy by November 30th.

Mr Uribe has still not said that he definitely wants another term. His only interest is to ensure that his "democratic security" policies continue, he insists. In May he said that he did not want to be seen as "someone who clings to power" and that "to perpetuate the president" was "inappropriate" in a country with "many and good leaders". Nevertheless, his government has mobilised to push the referendum law through Congress.

Barring unexpected changes, there can be little doubt that if Mr Uribe were to run, he would win. Violence continues in Colombia, but it is increasingly confined to remote rural areas. The economy has held up surprisingly well. But Mr Uribe's international standing would be damaged by the inevitable comparisons with Mr Chávez.

Getty Images



In approving the referendum law, Congress has left several of the president's leading supporters in limbo. Juan Manuel Santos, a former defence minister, and two other close allies of Mr Uribe have been poised for weeks to declare their candidacies, but only if that does not mean competing with the boss. For them, and for Colombia, the waiting continues.

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## The Vancouver winter Olympics

### Sliding off piste

Sep 3rd 2009 | VANCOUVER  
From The Economist print edition

#### Anxieties mount over the games

FOR a long time it seemed that the winter Olympic games to be held in Vancouver and the nearby ski-resort of Whistler in February 2010 were set to be a modern miracle: controversy-free, efficient and financially solvent. The enthusiasm with which British Columbians greeted the award of the games back in 2003, when 50,000 cheering fans packed a local stadium, continued as preparations rolled smoothly on, sponsors signed up, workers agreed to no-strike deals and venues sprang up on time and on budget. But now, expectation is suddenly tinged with anxiety.

One reason is the recession. British Columbia's economy was among the fastest-growing in Canada, partly thanks to spending on Olympics-related works. But the province's lumber industry has been hit by the housing bust in the United States. Unemployment has more than doubled since January 2008, to 8%; tax revenues are falling steeply. On September 1st the province's finance minister unveiled changes to the budget. Breaking a pattern of surpluses, he forecast a C\$2.8 billion (\$2.5 billion) deficit in this fiscal year, followed by three more years of red ink. Spending on infrastructure, including the Olympics, will continue as planned. But there will be cuts in "non-essential" spending. Some 300 staff have been shed, and the remainder face a wage freeze.

The recession has also had a direct impact on the Olympics. Facing a shortfall in hoped-for income from sponsorship deals and private investment, the Vancouver Organising Committee announced cost cuts in January. It insists that the games will still come within the operating budget of C\$1.75 billion. But Vancouver's city government has already had to bail out the developers of the Olympic village being built on the city's waterfront, adding up to C\$458m to its debt. The village was being financed by Fortress Investment Group, an American hedge fund. With the property market ailing and the village suffering cost overruns, it sought stiffer guarantees for its loans, which the city opted to buy out. After housing the athletes, the 1,100 flats are supposed to be sold, but only about a third of them have so far found buyers.

The provincial government insists that it will not spend more than C\$765m on the games. But that omits some C\$4 billion for infrastructure projects which formed part of the successful pitch to hold them. These include widening the road from Vancouver to Whistler, a new rail link to the airport, and a new convention centre (which will act as the media centre during the events). British Columbia's auditor-general calculated in 2006 that the net cost of the games to provincial taxpayers would be C\$2.5 billion.

Some locals are anxious, too, that closer inspection by all those visiting journalists may damage Vancouver's reputation as one of the world's most liveable cities. Not far from the gleaming waterfront are the squalid streets of Downtown Eastside, an infamous ghetto of the poor, the homeless and drug addicts. They will be joined by several groups of protesters, whose causes range from world poverty to opposition to seal hunting or to the games themselves. An elaborate security operation is planned, involving thousands of police and troops, and costing C\$900m, mostly from the federal government.

Canadians are great fans of winter sports. Perhaps a string of gold medals will disperse the gloom. Much of the new infrastructure will be useful long after the athletes have returned home. But already it is clear that the Vancouver Olympics, like most of their predecessors, will not "break even" without big taxpayer subsidies. Londoners, who are preparing for the much bigger and more expensive summer games two years later, will doubtless be watching with interest.

Getty Images



The bill comes later

## War and politics in Afghanistan

### McChrystal in the bull ring

Sep 3rd 2009 | KABUL  
From The Economist print edition

#### NATO is running out of time in Afghanistan

AFP



CALL it the “Matador Doctrine”: a beast charges pointlessly at the bullfighter’s cape, exhausting itself and suffering endless small wounds, until it succumbs to a weaker opponent. Stanley McChrystal, NATO’s commander in Afghanistan, says his troops have been acting like a powerful but stupid bull lunging after insurgents; without a change of tactics NATO may yet have its ears cut off by the Taliban.

After nearly eight years of war, the allies’ weariness is showing. The latest opinion polls say the American public is gloomy about the fight in Afghanistan and increasingly resistant to sending more troops there. Parts of the Democratic Party, in particular, are hostile to the war and the White House is nervous. General McChrystal knows he has little time to turn things around.

On August 31st he submitted his long-awaited review to NATO leaders, saying “the situation in Afghanistan is serious, but success is achievable.” The assessment is confidential (and bleak, it is said) but the commander’s priorities are known, not least from a directive to his troops of five days earlier containing the bull-and-matador simile. They are: protect the Afghan population rather than kill or capture insurgents; build up Afghan forces; boost the legitimacy of the government in Kabul and improve the co-ordination of civilian aid. The Taliban and the Western-backed Afghan government are fighting for the allegiance of the Afghan people, says the general; the people will decide who wins.

Such ideas have been American orthodoxy on counter-insurgency for nearly three years, adopted successfully in Iraq and less successfully by previous commanders in Afghanistan. General McChrystal’s directive on the need for units to drive vehicles courteously is little different from the order issued by his sacked predecessor, General David McKiernan, and posted at NATO bases: “We can’t win if you drive recklessly.”

But if the theory is the same, the implementation may be different. General McChrystal has already sharply reduced the frequency of air strikes even as Western military casualties are at their highest since the fall of the Taliban. His report emphasises the “reintegration” of Taliban fighters—don’t call it “reconciliation”—to try to draw away as many as possible of those who fight for money or tribal honour rather than for religious ideology.

The general wants much closer “partnering” of Western troops with Afghan forces, from common headquarters to joint platoons. He calls for the accelerated training of Afghan forces, to nearly 220,000

soldiers and policemen by the end of next year, with the option of nearly doubling that number to 400,000 if, as is likely, security conditions do not improve. This week a Taliban suicide bomber killed the Afghan deputy intelligence chief, Abdullah Laghmani, and more than 20 others.

General McChrystal has not openly said what his entourage agrees on: to protect the population, NATO will need more troops than the 110,000 it will have by the end of the year after the reinforcements ordered by Barack Obama. A request for more may come in a second report later this month and will depend not just on military calculations, but on two political ones: will Afghans see a bigger NATO presence as an occupying force? Will voters in the West agree to sink more blood and treasure in the Hindu Kush?

On both counts the task would be greatly eased if the Afghan leader, President Hamid Karzai, were not so damaged by the ineffectiveness and corruption of his government. Last month's presidential election was a chance to relaunch his leadership. But the claims of widespread ballot-rigging are tainting him further. Afghan officials have been flooded with more than 2,000 complaints of fraud. Mr Karzai's main challenger, Abdullah Abdullah, a former foreign minister, has presented evidence of forged ballots, coercion and other irregularities. He urges his supporters to stay calm, but says he will accept neither defeat nor a unity government.

On September 2nd, with over 60% of stations reporting results, Mr Karzai had 47.3% of the vote against 32.6% for Mr Abdallah. This excludes most votes in the turbulent south, which diplomats think will carry Mr Karzai over the 50% mark to avoid a run-off. The president would no doubt then reward former warlords who supported him with jobs and spoils. Western officials seem glumly reconciled to another term for Mr Karzai. General McChrystal's directive tells soldiers to "confront self-serving officials who monopolise wealth and power and abuse people's trust". Easier said than done.



## The People's Republic at 60

### A harmonious and stable crackdown

Sep 3rd 2009  
From The Economist print edition

#### China celebrates a milestone with a new round of repression

Getty Images



**Uphold the basic economic system with public ownership playing a dominant role, tra-la**

IN THE West many people retire at 60. China's Communist Party is still going strong. And strong is the word. Amid the global financial crisis, asserted one leading newspaper, a huge military parade due to take place in Beijing on October 1st to mark the 60th anniversary of the communist nation's founding will be an "effective way of deterring hostile forces at home and abroad". The event will certainly show that China is unafraid either to spend money or to risk spoiling celebrations with a massive clampdown.

Police in the capital, helped by hundreds of thousands of volunteers, are being mobilised in a security operation as stifling as that mounted for last year's Olympic Games. Officials are under orders to stop people travelling to Beijing to complain about local injustices. Riot police have been put on heightened alert in restive Tibet and Xinjiang (though fresh protests involving hundreds of Han Chinese broke out in Xinjiang's capital Urumqi as *The Economist* went to press).

The first rehearsal for the event passed off without reported incident. It involved some 200,000 people, all of whom, even the providers of mobile lavatories for the event, had been vetted to make sure they are loyal party members.

This will be Hu Jintao's first national day military parade as president. The event takes place only once every ten years (and the 1989 one was cancelled because of the Tiananmen Square retributions). There will be the usual display of military might, with everything from intercontinental ballistic missiles to tanks and fighter jets. With the help of annual double-digit budget increases for most of the past two decades, China has a lot of new kit to show off.

The festivities will culminate in an evening performance and fireworks display where, says the government's website, Chinese leaders will "sing and dance with Beijing residents". But just in case some killjoys fail to catch the joyous mood, on August 27th, the government ordered local administrations to "create a harmonious and stable price environment" for the national day by stepping up monitoring of prices of food, liquid gas, tickets to tourist spots, transport and other things.

The government has tried to reassure citizens that recent increases in the prices of pork and eggs—sometimes precursors to general inflation—are just normal seasonal fluctuations. There had been speculation that it would put off increasing petrol and diesel prices until after the holiday but on September 2nd pressed ahead with them anyway, though it imposed smaller rises (about 4-5%) than some analysts had predicted. The *Shanghai Daily* said this "moderation" was an effort to spare consumers "too much pain in the pocketbook" as the holiday approaches.

Citizens might lift their spirits with a list of 50 officially approved slogans issued to mark national day (soldiers have been ordered to post them up and shout them in their camps). "Uphold the basic economic system with public ownership playing a dominant role and diverse forms of economic ownership developing together, and with the practice of distribution according to work being carried out as the mainstay alongside other forms of distribution," goes a particularly snappy one.

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## The Dalai Lama in Taiwan

### Splittists' reunion

Sep 3rd 2009  
From The Economist print edition

#### Much was at stake for all sides during the Dalai Lama's visit to Taiwan

A VISIT from the Dalai Lama was surely the last thing Taiwan's president, Ma Ying-jeou, wanted amid widespread public anger over his government's slow response to a deadly typhoon in August. An angry China could have greatly added to his woes. But for all its grumbling about the trip, which is due to end on September 4th, the mainland does not want to upset a budding friendship.

Mr Ma was well aware that he was taking a risk when he decided on August 27th to approve the Dalai Lama's request to visit the island. It would be the exiled Tibetan leader's first trip there since 2001 and only his third ever. China was furious on the previous occasions, accusing the Taiwanese authorities of colluding with Tibetan "splittists". Then, however, Taiwan was led by presidents who delighted in riling the mainland. Mr Ma came to power last year promising to mend fences.

Mr Ma does not want to jeopardise trade negotiations that Taiwan hopes to launch with China in October. His government is keen to secure tariff cuts for industries that it believes will be put at a disadvantage when a free-trade pact between China and the Association of South-East Asian Nations takes effect next year (see [article](#)). Mr Ma's goal is for Taiwan to secure a similar free-trade deal.

In truth he had little choice but to approve the trip. On August 26th seven local politicians from the opposition Democratic Progressive Party (DPP), which favours Taiwan's formal independence from China, surprised him by publicly announcing that the Dalai Lama had accepted their invitation to visit Taiwan to pray for the souls of Taiwanese who had died during Typhoon Morakot, which ravaged the island earlier in August. The storm left almost 700 people dead. Mr Ma had turned down a proposed visit by the Dalai Lama last year, saying the timing was not right. This time he risked appearing heartless if he had refused. Plunging popularity polls suggested he could not afford that.

So far, he seems to have pulled off his balancing act. China's predictable outrage (it does not like the Dalai Lama paying visits anywhere) stopped short of blaming Mr Ma himself. The president helped by ruling out a meeting with the Dalai Lama, unlike his predecessors President Lee Teng-hui who had done so in 1997 and President Chen Shui-bian who had met him in 2001.

The Dalai Lama, for his part, appeared eager to avoid trouble. "My visit here is of a non-political nature," he said at the airport at the start of his six-day visit. "Actually, I am a Buddhist monk. It's my moral principle to come if someone asks me to share sadness." His aides cancelled a speech and a press conference and scaled down a public meeting. The Dalai Lama's nephew, Khedroob Thondup, said this was a result of heavy pressure from Mr Ma's National Security Council.

In the village of Hsiao Lin, now a grey mass of rubble where an estimated 500 people were buried alive in a landslide triggered by the typhoon, the Dalai Lama embraced weeping relatives of the villagers. Deliberately placing his face away from journalists' microphones, the exiled Tibetan leader said Taiwan was enjoying democracy. "I myself am totally dedicated to the pursuit of democracy," he said.

China's retaliation has been desultory. A delegation led by Su Ning, China's deputy central bank governor, which was scheduled to arrive in Taiwan on August 31st, postponed its visit—but only by a week. Chinese officials may be pleased that the DPP has apparently gained little. Whatever gains it might have made were overshadowed on September 1st when former President Chen's wife, son, daughter and son-in-law



**Buddhist monk on non-political visit**

Reuters

were jailed for perjury. On September 11th a court is due to announce a verdict in the corruption trial of Mr Chen himself. Few expect an acquittal.

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## Sri Lanka and the EU

### Losing touch with old friends

Sep 3rd 2009

From The Economist print edition

#### **A report for the European Union into Sri Lanka's fitness for preferential tariff treatment is unfavourable**

RARELY has a government soiled its reputation as dramatically as Sri Lanka's. In recent months President Mahinda Rajapaksa's regime has won a war and lost the love of many allies.

Its alleged wartime and other abuses make a grim catalogue: thousands of Tamil civilians allegedly killed by army shelling during the rebels' last stand; scores of Tamils disappeared; nearly 300,000 Tamil war-displaced callously interned; murder and intimidation of journalists—including J.S. Tissainayagam, sentenced to 20 years hard labour on August 31st for criticising the army's tactics (see [article](#)).

There is not much high-minded western countries—to whom Sri Lanka once looked for aid money—can do about this. Mr Rajapaksa has found alternative friends, in China, Libya, Pakistan—and others, who recently scotched a European effort to launch a war-crimes investigation into Sri Lanka. But the Europeans do have one wrench on Mr Rajapaksa's government: a trade concession known as "GSP Plus". This boon, which has helped make exports to the EU the country's biggest source of foreign exchange, worth \$3.3 billion last year, is up for review. Judging by an EU-commissioned report on Sri Lanka's compliance with its terms, which include stipulations on human rights, it can kiss the concession goodbye.

The confidential 130-page report, which has been obtained by *The Economist*, concludes that Sri Lanka has failed to honour important human-rights commitments, and is ineligible for GSP Plus. Widespread police torture, abductions of journalists, politicised courts and uninvestigated disappearances have all played a part in creating a state of "complete or virtually complete impunity in Sri Lanka". The internment of the Tamil displaced, which the government claims is necessary to weed out the last Tamil Tiger rebels and to protect them from munitions left in their fields, is "a novel form of unacknowledged detention".

A final decision on GSP Plus is not due until October. The government, which barred the report's authors from visiting Sri Lanka, called the study "outrageous" but seems resigned to losing the trade preference: a senior official in the trade ministry, S. Ranugge, admitted: "GSP Plus is very unlikely."

Perhaps this does not bother Mr Rajapaksa: defying the West is part of his appeal. Anyway, his minions recently secured a \$2.6 billion loan from the IMF. But as an indicator of where one of Asia's oldest democracies may be headed, it should worry Sri Lankans, and all who wish their country well.

**Malaysian politics****Dropping a Klander**

Sep 3rd 2009

From The Economist print edition

**A construction scandal reverberates throughout Malaysian politics**

DREAMED up in the go-getting 1990s, the Port Klang Free Zone was supposed to turn a medium-sized harbour into a regional trans-shipment hub that might one day rival Singapore. The project got a green light in March 1999, as Malaysia was emerging from a recession. A decade on, amid another recession, the block of reclaimed swampland sits virtually empty—and bust. Excluding interest payments, cost overruns have risen to 3.5 billion ringgit (\$987m), up from 1.9 billion ringgit in 2001-02. An audit by PricewaterhouseCoopers said the project would not make money and warned that the port authority might default unless it restructured the business. The resulting scandal has raised familiar worries about crony capitalism, tarnished the reputation of a new anti-corruption watchdog and enveloped a junior partner in the ruling coalition.

In the 1990s scandals about dodgy land deals, secret contracts and lax or non-existent oversight came and went, unexamined. Today an invigorated opposition and an unfettered online media have made apathy and obfuscation harder. Caught in the new spotlight, port officials, politicians and contractors have traded accusations of fraud, corruption and waste. Police are finally investigating the port after years of prodding. Heads seem likely to roll, though not necessarily the right ones.

The scandal should be a job for the new Malaysian Anti-Corruption Commission (MACC), created earlier this year from the ashes of another, toothless agency. The new body is supposed to act without fear or favour in tackling corruption, which Transparency International (TI) reckons has worsened in recent years. Anti-graft campaigners welcomed the setting up of MACC, which—on paper, at least—is a more robust institution than its predecessor, with independent advisory panels.

Alas, the MACC is not exactly focusing much attention on the port. Instead, say critics, it has been spending time on other matters, some trivial, often in opposition-run states, leading to accusations of partisanship. Several executives in Selangor, which is run by Anwar Ibrahim's People's Justice party, have been hauled in for questioning about expenses unrelated to the port. On July 16th the probe took a tragic turn when Teoh BEng Hock, a young aide to a state councillor, fell from a window in a tower block, where MACC officials had earlier been questioning him in a late-night session. An inquest into his death has considered stories of a struggle before his fall, as well as suggestions of suicide. A verdict is expected next month.

Meanwhile, the MACC and the police have said they are investigating the Port Klang case. About time, grumbles Tony Pua, an opposition MP in Selangor. He points out that a colleague filed a police complaint in 2004 over irregularities in land-acquisition there. Several other complaints were also filed. The police said there was no case to investigate. "It troubles a lot of people," says Paul Low, president of TI's Malaysia chapter.

The scandal has shaken the Malaysian Chinese Association (MCA), a member of the coalition led by the prime minister, Najib Razak. The party has long held the transport portfolio, giving it oversight of the port. Ong Tee Keat, the party's president and minister of transport, has vowed to get to the bottom of the scandal, even if it involves former or present MCA officials. The result has been a power struggle between him and the party's number two, Chua Soi Lek, a former health minister. On August 26th the party expelled Mr Chua over a 2007 sex scandal.

But Mr Ong's image as an angel of justice took a hit when the port contractor claimed he had given him a political donation of 10m ringgit. Mr Ong has since filed a defamation suit against the contractor, Tiong King Sing. Not to be outdone, Mr Tiong, who heads a small political party in Sarawak, lodged a police report against Mr Ong. Mr Tiong has political clout. Few expect him to lose the case. However, Mr Chua, the ousted deputy, is not going quietly. He has called an extraordinary general meeting of MCA delegates to challenge his sacking. Only one of the party leaders is likely to survive.



**Asian trade****The noodle bowl**

Sep 3rd 2009

From The Economist print edition

**Why trade agreements are all the rage in Asia**

THESE are worrying times for world trade. Despite a recent levelling out after the first quarter's collapse, the World Trade Organisation reckons global trade volumes will be around 10% lower this year than in 2008. Trade ministers convened in New Delhi this week to talk about resurrecting the Doha trade talks—but those talks remain moribund. Yet amid the general gloom, activity on one sort of trade—bilateral free-trade agreements (FTAs)—continues at a feverish pace in Asia. This month, another deal was signed, this time between India and South Korea.

The agreement is the first between two of Asia's four biggest economies (India, China, Japan and South Korea). But the stream of FTAs, typically between one large economy and a smaller partner, has become a flood in the past decade. From just six in 1991, their number had increased to 42 by 1999. But almost three times as many have been signed since, bringing the number of such agreements in Asia to 166 by June this year, according to the Asian Development Bank (ADB).

Still more—62 at last count—are at various stages of negotiation, including one between Japan and India. China and Taiwan are in talks about a deal, which shows just how deeply FTA fever has taken hold of Asia (trade deals are even used as a way to bridge the gulf between the two Chinas). And apart from bilateral agreements, several countries, including China and Japan, now have signed trade deals with the Association of South-East Asian Nations (ASEAN), a regional body.

Asian countries' enthusiasm for bilateral agreements is palpable, and they have reason to want to bolster intra-Asian trade. The growth of global supply chains means that parts made in one Asian country from raw materials imported from another are re-exported to a third for final assembly. These countries hope that more bilateral agreements will enable more specialisation. India, for example, hopes that its new FTA will allow it to become a hub for Korean electronics companies seeking to exploit lower labour costs to make goods destined for markets in the Middle East.

Added to all this is the fact that Asia's big economies are set to provide the world with most of its growth this year, and emerging Asia will continue to be the world's fastest-growing region for several years. Strategic rivalries complete the list of incentives. Many think that India has jumped into the fray because China has been signing one pact after another.

But economists caution that the proliferation of FTAs is unlikely to do wonders for the region's trade. Aaditya Mattoo, of the World Bank, points out that because trade barriers in Asia are already relatively low, the benefit of a small further reduction in barriers in one market is tiny.

Bilateral deals come laden with complicated rules about where products originate—rules which impose substantial costs of labelling and certification on firms. The more overlapping deals there are, the more complex the rules and the higher the costs. Those who follow Asia's FTA mania refer to this as the "noodle bowl". No wonder few firms actually want to use FTAs. An ADB survey of exporters in Japan, South Korea, Singapore and Thailand in 2007-08 found that only 22% took advantage of them. Certainly, the huge rise in trade deals seems to have done nothing to boost the share of the continent's trade that is intra-Asian (see chart).

Countries may worry that a multilateral deal would erode the preferential terms they got through bilateral ones. If so, the flurry of bilateral deals may have come at the expense of a world trade agreement. Gary Hufbauer of the Peterson Institute of International Economics in Washington, DC, thinks that China and India have decided they would "rather pursue bilateral FTAs than make the necessary concessions to push Doha across the finish line."

Some would dispute that. India, widely blamed for contributing to the collapse of the Doha talks in July 2008, is now holding a summit of trade ministers which aims to bridge the gap between world leaders' repeated promises to complete the round by 2010 and the reality that, as one WTO insider puts it, "nothing is happening on the ground". Indian politics should allow greater negotiating flexibility, if talks restart, thanks to a stronger government and an opposition in disarray. But a deal will require America to build up domestic support for more open trade. Until that happens, Asian countries may content themselves with a fuller noodle bowl.



## Iraq's freedoms under threat

## Could a police state return?

Sep 3rd 2009 | BAGHDAD  
From The Economist print edition

**Iraqis are increasingly worried that their new freedoms are under threat**

Reuters



THE main book market, in Baghdad's Mutanabi Street, was a hive of angry chatter this week. Bespectacled traders, complaining about new censorship laws, shouted, "This is not freedom of expression," and talked of holding a demonstration like one last month, when journalists protested against new restrictions.

But would the booksellers dare? They said they were already worried that plainclothes policemen had been taking their names. Perhaps they should go instead to court and fight censorship with the help of lawyers. "Not a chance," said one book-dealer. "This is the new Iraq." Legal protections, he noted, count for little. "Power", he added, "is held by the men with the guns."

He had a point. The Shia-led government has overseen a ballooning of the country's security apparatus. Human-rights violations are becoming more common. In private many Iraqis, especially educated ones, are asking if their country may go back to being a police state.

Old habits from Saddam Hussein's era are becoming familiar again. Torture is routine in government detention centres. "Things are bad and getting worse, even by regional standards," says Samer Muscati, who works for Human Rights Watch, a New York-based lobby. His outfit reports that, with American oversight gone (albeit that the Americans committed their own shameful abuses in such places as Abu Ghraib prison), Iraqi police and security people are again pulling out fingernails and beating detainees, even those who have already made confessions. A limping former prison inmate tells how he realised, after a bout of torture in a government ministry that lasted for five days, that he had been relatively lucky. When he was reunited with fellow prisoners, he said he saw that many had lost limbs and organs.

The domestic-security apparatus is at its busiest since Saddam was overthrown six years ago, especially in the capital. In July the Baghdad police reimposed a nightly curfew, making it easier for the police, taking orders from politicians, to arrest people disliked by the Shia-led government. In particular, they have been targeting leaders of the Awakening Councils, groups of Sunnis, many of them former insurgents and sympathisers, who have helped the government to drive out or capture Sunni rebels who refused to come onside. Instead of being drawn into the new power set-up, many of them in the past few months have been hauled off to prison. In the most delicate cases, the arrests are being made by an elite unit called the Baghdad Brigade, also known as "the dirty squad", which is said to report to the office of

the prime minister, Nuri al-Maliki.

The American-sponsored judicial system was supposed to protect Iraqis' civil rights. But it is sorely overstretched, with some 1,500 people being brought into prisons every month as the Americans empty their own Iraqi jails. The number of Iraqis in American-run prisons has dropped to less than 9,000 from more than 21,000 a year ago, whereas the number in Iraq's own jails has risen from 35,000 in February probably to more than 40,000 today.

Moreover, sentencing is getting harsher, with more people sentenced to death. On a single day in June 19 people were hanged in Baghdad. In a recent report Amnesty International, a British-based group, says that more than 1,000 Iraqis face execution, often on the basis of confessions, which, it says, are sometimes made under torture.

Journalists are prominent victims of Iraq's judicial system. In July one was arrested for photographing a Baghdad traffic jam, after his pictures were deemed "negative" for mocking Mr Maliki's assertion that life in the capital was improving. Last year Iraq dropped to 158th place out of 173—its lowest ranking since the American invasion—in a press-freedom table drawn up by Reporters Without Borders, a Paris-based lobby, which detects a decline in freedom in many countries (see [article](#)).

The government recently announced plans to censor imported books as well as the internet, saying it wanted to ban hate screeds and pornography. But human-rights monitors fear this may presage a first step towards a wider web of censorship. Internet cafés face new rules that require them to register. Many bloggers and other e-mailers may lose protective anonymity.

Some Iraqis say they approve of this rush to reapply social controls. They see them as a good way to fight sectarian violence. But even if less freedom were to bring greater security, the new laws are part of a looming and potentially violent power struggle. The new establishment has yet to entrench a solid political system, despite endorsing two constitutions since Saddam was ousted. The Shia-led federal government in Baghdad wants a strong unitary state, whereas the Kurds and some other groups still seek a more federal one.

In any event, Mr Maliki and his friends are trying to secure as much control as they can over the levers of power in the run-up to a general election in January, all the more feverishly since a rash of big bombings in Baghdad in the past two months has badly dented his reputation as a guarantor of public safety. His government is also seeking to tighten rules to regulate political parties and independent associations (including charities), causing still more alarm. "This is not how you build a democracy," says Maysoon al-Damluji, a liberal member of parliament.

It is too soon to say Iraq will revert to Saddam's heinous standards. Parliament is diverse and vigorous. The press still airs a range of opinion. The courts are not yet rubber stamps. But the trend is going the wrong way. "This will be a police state, no question," says a Western diplomat with long experience of Iraq. "It'll take two or three years. But it's coming."

## Lebanon's mixed marriages

## Not at home

Sep 3rd 2009 | BEIRUT  
From The Economist print edition

## Couples from different religions still cannot marry in their own country

WHEN a stellar Lebanese couple—a television talk-show anchorman and a rising female politician—recently got married, they had to tie the knot in a registry office in Cyprus. That is because Malik Maktabi, of TV fame, is a Shia Muslim, whereas Nayla Tueni, a member of parliament, is a Christian. Her father, an influential owner-editor murdered four years ago, was Greek Orthodox, her paternal grandmother a famous Druze poet. Perhaps oddly for a country with 18 officially recognised religious groups and fewer than 4m people, Lebanon has no provision for civil marriage.

It is the religious authorities that oversee marriage, divorce and inheritance. Couples from different religions, atheists and those who do not belong to one of the officially recognised religions—for instance, Buddhists, Hindus, Bahais and members of unregistered Protestant groups—cannot marry in their home country. Even for couples fortunate or pragmatic enough to share a religion, marriage overseen by the religious authorities has drawbacks. The Maronite church, Lebanon's main Catholic one, forbids divorce. If a Sunni man dies, a Sunni widow may inherit only half of his estate.

But though civil weddings are not permitted at home, the government does recognise those that take place abroad. Enterprising travel agents are keen to help people use this loophole by arranging all-in wedding package holidays: "Just say 'I do' and we'll do the rest." For \$1,900, couples can hop over to Cyprus (half an hour by air), where a civil registrar, witnesses and photographer are at hand. The travel agent deals with all the tricky paperwork. The happy pair can sign on the dotted line and be back in Beirut on the same day. One travel agent says he has sold more than a thousand wedding packages since he began offering the service three years ago.

Not everyone is happy, though. Civil-rights lobbyists have long argued that marital status should be determined independently of the religious authorities. Pollsters have found a majority in favour of allowing civil marriage in Lebanon. On Valentine's Day this year campaigners protested against the law by staging jovial mock wedding ceremonies in a Beirut bar.

Change, if it comes, may be slow. The last serious effort to allow civil unions was in 1998. But campaigners notched up a small victory earlier this year when the interior minister, Ziad Baroud, ruled that Lebanese citizens would have the option of removing their religious-group classification from their national identity cards.

Illustration by Steve O'Brien



## Iran's dissenting students

## Trying to pep up the opposition

Sep 3rd 2009 | TEHRAN  
From The Economist print edition

## Why the ruling ayatollahs want to keep Iran's students under their thumb

IN THE autumn of 1978 the beleaguered shah postponed the autumnal return of Iran's politically disgruntled students to their universities by several months. But when the institutes of learning eventually opened their doors, the students soon poured furiously into the streets in their tens of thousands, until, in the growing mayhem, the shah fled and Ayatollah Ruhollah Khomeini replaced him. Could the same process occur all over again?

Today's authorities are loth to take any risks. Iran's students are still seething with discontent, following the disputed presidential election of June 12th. And the government sounds reluctant to reopen universities on their due date, September 23rd. But it also wants to show that everything is back to normal after the turmoil of the two months that followed the election.

The authorities are certainly preparing to take countermeasures in case students again revolt. At a recent Friday prayer, the quiet streets around Tehran University became rallying points for clusters of conservative worshippers, many of them wearing the characteristic untucked shirts of the vast paramilitary organisation known as the *baseej*, which has carried out much of the thuggery against opponents of Mahmoud Ahmadinejad, who was reinstalled as president last month. Many of Tehran's students were prevented from taking their final examinations because of the disturbances in the election's immediate aftermath. Now the *baseejis* are on alert in case, when the students do return later this month, they take their chance once more to express their disaffection in public.

In any event, the Supreme Cultural Revolution Council, the government body that oversees education, stated at the end of August that universities may stay shut in the autumn because of swine flu, just as officials had cited high pollution levels as the reason for keeping students indoors after the summer election.

In some universities the authorities have delayed registration of students for the new academic year. In Shiraz, where campuses have already reopened, the security forces are tightly controlling them, with circulars telling students not to undertake unauthorised political activities. Elsewhere, even if universities do reopen, classrooms may be packed with loyal *baseejis*, who may get increased quotas.

Students who have gone back say they are afraid that masked *baseejis* may beat them up if they step out of line. This happened in mid-June when Tehran University's dormitories were stormed at midnight in a raid now being investigated on the orders of Ayatollah Sadeq Larijani, the new head of the justice system, a tough disciplinarian. "[The regime] can't control students easily," says a Tehran graduate. "The only way to keep them calm is to threaten them with an attack by the *baseej*."

Students played a big part in the summer protests in Tehran. They were at the forefront of demonstrations, helped organise strikes and lambasted the regime on their blogs. They also provided staff for the main opposition candidates, Mir Hosein Mousavi and Mehdi Karroubi, handing out leaflets, knocking on doors, and arranging campus meetings. Some helped shape the opposition manifestos through the influential Office for Strengthening Unity, Iran's main student organisation, which has remained critical of the regime.

The students at the universities in Tehran who come from the provinces and were living in those dormitories were sent home when the post-election turmoil began and universities shut. Many of them, now poised to return, are keen to revive what they missed. "Since they have no parents around them," says an engineering student at the Islamic Azad University of South Tehran who comes from the north-western town of Qazvin, "they are free to do anything. The atmosphere is highly radical. Students right now can continue the protests in a very good way."

Iran's supreme leader, Ayatollah Ali Khamenei, seems rattled by the prospect of student unrest—and has



hinted that the regime may purge universities of professors suspected of “unIslamic” tendencies. On August 30th he complained that the study of social science “promotes doubts and uncertainty”, telling a meeting of students and teachers that the study of liberal arts and other humanities had led to a “loss of belief in godly and Islamic knowledge.” Perhaps presaging a crackdown on teachers as well as students, Kamran Daneshjou, who ran the interior ministry’s election headquarters during the presidential poll, has been appointed minister in charge of universities.

Yet the regime is unlikely to close the universities altogether. This month it may become clearer whether the students can pep up an opposition that may, in the past month or so, have begun to flag. In any event, internecine skirmishing within the ruling establishment is still going on—ensuring that Iran’s crisis is far from over.

## The crisis in Darfur

### Neither all-out war nor a proper peace

Sep 3rd 2009 | KHARTOUM  
From The Economist print edition

**New mediators are trying to resolve the conflict in Sudan's ravaged western region**

AFP



WHEN General Martin Agwai, the outgoing commander of the United Nations and African Union (AU) peacekeeping mission in Darfur, known as UNAMID, said that the war in Sudan's western region had all but dried up, he stirred controversy. Some people are loth to acknowledge that the nature and scale of the violence in Darfur have changed. All the same, violence still rages—and the UN must share the blame for failing to do more to stop it.

In part, the general was stating the obvious. About 300,000 people have died in Darfur as a result of the violence that erupted in 2003 after rebels attacked Sudanese government forces. This year, by contrast, more people have died in inter-ethnic fighting in the south Sudanese state of Jonglei alone than in Darfur, where big clashes have been happening only rarely. The death rate in Darfur, a controversial measure, is widely accepted to be below what aid agencies consider the threshold for an emergency. Especially in America, campaigners who say that genocide is still taking place in Darfur find this hard to admit.

But General Agwai accepted that there was still no peace in Darfur. If anything, the fragmentation of rebel groups, sometimes into little more than gangs of bandits, has left it as dangerous as ever—and less predictable. Aid workers and food convoys are often attacked. Low-level fighting is still creating refugees, who must join the 2.7m others in the camps that litter Darfur. UNAMID has failed to stem this violence.

For sure, General Agwai's task has been hampered by circumstances beyond his control. His force arrived at the start of last year but is still less than three-quarters of its mandated strength of 26,000 soldiers and police, the largest such UN peacekeeping force ever deployed. The general also got less logistical support than he wanted. He asked for 18 military helicopters, which are vital in the remote desert region of Darfur, the size of France. So far he has received none. He also faced concerted bureaucratic obstruction by Sudan's government.

Yet UNAMID had substantial assets at its disposal. But it rarely intervenes to stop the fighting. It has done a bit to boost security in Darfur's towns but has provided almost no protection in rural areas. Even in towns, security has been patchy. On August 29th two UNAMID people were kidnapped in Zalingei. "If they can't handle their own security, how can they protect anyone else?" asked one aid worker.

The political head of UNAMID, Rodolphe Adada, a bow-tied Congolese diplomat who also stepped down last week, has been

largely ineffective. Others have taken the lead in trying to revive peace talks in Darfur, stalled since the total failure of a conference in Libya in October 2007. On behalf of the AU, Thabo Mbeki, a former South African president, is looking at ways, perhaps involving so-called hybrid courts, to prosecute those responsible for war crimes in Darfur.

The idea is to present an alternative legal framework that Sudan's government might find more palatable than seeing some of its members hauled off to the International Criminal Court (ICC) at The Hague, which has indicted President Omar al-Bashir and two of his top men. Mr Mbeki is expected to report back to the AU later this month. A compromise over the ICC wrangle might possibly let Sudan's government be more willing to make concessions that could lead to a political settlement in Darfur.

At the same time, a variety of other mediators, including the Qataris and a new American special envoy to Sudan, Scott Gration, have been encouraging the disparate rebel groups to resolve their differences and form a more coherent negotiating body. This requires patience. The utter fragmentation of the rebels into warring factions in the past three years is a big reason for the lack of progress towards peace in Darfur. But diplomats are now shuttling between the capitals of Egypt, Libya, Qatar, Sudan and elsewhere. Previous efforts have got nowhere. Recently there has been at least a little spurt of hope.



## An East African Federation

## Big ambitions, big question-marks

Sep 3rd 2009 | LAMU  
From The Economist print edition

**The idea of a United States of East Africa is less far-fetched than it was**

WHAT exactly is "East Africa" these days? Certainly, the parts of old British East Africa—Uganda, Tanzania (first a German colony) and Kenya. They have trodden very different paths since colonial days. Uganda has had coups, turmoil under Milton Obote, bloody convulsions under Idi Amin, and long spells of civil strife. Under Julius Nyerere, an incompetent or saintly authoritarian (depending on who you ask), Tanzania strove for a socialist ideal that kept its people plodding and poor but united and peaceful. Kenya was more dynamic and worldly, but more violent and corrupt. It may now be the least stable of the trio.

In 1967 these three founded the East African Community (EAC) with a view to federation. Little progress was made; the EAC collapsed in 1977, to general rejoicing among Kenyans, who reckoned they were carrying the other two. In 1999, however, the project was revived. In 2007 it even expanded to include Burundi and Rwanda. Many still doubt whether a European Union-style federation can ever be achieved in the region, despite the EAC's promise to create a single currency by 2015 and to make a customs union work. But recent developments have made further integration more likely.



Tanzania has usually been the one to put the brakes on the EAC, fearing it will be overrun with land speculators and better-educated Kenyans and Ugandans. But Tanzania's president, Jakaya Kikwete, now says his people should stop moaning and prepare for a common market. The head of Tanzania's tiny stock exchange reckons there could be a single east African version in a few years. Work is already under way to create a common trading system.

If Tanzania has lagged behind, Uganda has usually encouraged the federal idea, not least because its president, Yoweri Museveni, has long nurtured a wish to end his career as the EAC's first president.

Paul Kagame, president of tiny, landlocked Rwanda, is also keen to press ahead. His recent rapprochement with Congo, Rwanda's vast, ramshackle neighbour to the west, was made in the hope of increasing trade via the fledgling EAC's market. He is now intent on adding value to Congolese raw materials and shipping them to the world market through the EAC, too.

Congo's government seems willing. China, by some counts the biggest investor in the region, plainly wants Congo's timber, iron ore and other minerals shipped across the Indian Ocean via the EAC.

For that and other reasons, Kenya, for its part, wants to build a new deep-sea port near the island of Lamu, close to the border with Somalia. Kenyan officials have so far brushed aside concerns for the mangrove swamps and nearby marine sanctuary. They say the port, refinery and new city will be built on the mainland to preserve Lamu's heritage and tourist industry. The hope is for roads and railways to Mogadishu, Addis Ababa and Kigali and a pipeline bringing in Ugandan and south Sudanese oil. Funds would flow in from Kuwait and other Arab investors. This would link up east Africa as never before, and a single currency and a customs union would then make much more sense.

And why should an East African federation stop with the club's existing member countries? If defined by the area in which the lingua franca of the Swahili language is used, the range of lorries heading out of the Kenyan port of Mombasa, and the magnet of Nairobi as a hub, east Africa spreads into Ethiopia and includes a chunk of Somalia, a swathe of east Congo, a strip of northern Mozambique and all of southern

Sudan, which could become an independent country in 2011, if its people vote in a promised referendum to secede.

The EAC already has 126m people. If it expands, it could add as many as 120m more to that number, making it more than twice as populous as Africa's 28 smallest countries combined—enough, its backers argue, to make a bigger EAC very attractive to foreign investors. The EAC says it would negotiate better deals with the rich world than individual African countries can.

Local businessmen are still sceptical. They argue that the EAC's dream of federation could be botched by a trade row, tribal violence or strangled at birth with red tape by venal politicians and bureaucrats. So the mood is mixed. Could east Africa take off as a regional trading bloc? Or will the idea disappointingly fizzle once again? An early test of the EAC's earnestness will be to see if it can get its member countries jointly to look after Lake Victoria, a common resource that scientists say has been overfished and poisoned by the sewage running off its overpopulated shores.

## Africa and climate change

**A green ransom**

Sep 3rd 2009 | NAIROBI  
From The Economist print edition

**Make the rich world feel guilty about global warming**

RICH countries should compensate Africa for all their belching chimneys and exhausts. In a rare fit of African unity, it was decided at a recent flurry of leaders' meetings that the United States, the European Union, Japan and others should pay the continent the tidy sum of \$67 billion a year, though it was unclear for how long. Ethiopia's prime minister, Meles Zenawi, is likely to lead a delegation of 53 countries (all of Africa minus Morocco) to the climate-change summit in Denmark's capital, Copenhagen, in December, where he will presumably lodge this demand.

Would the money come, if it came at all, with strings attached or as reparations for damage to Africa's atmosphere? Mr Meles has made it clear he is seeking blood money—or rather carbon money—that would be quite separate from other aid to the continent. If the cash were not forthcoming, the African Union (AU) might take a case to a court of arbitration and ask it to judge overall culpability for climate change.

The AU says it would not administer the carbon cash directly. National governments would get it. But it is unclear how it would be allocated. The UN's Intergovernmental Panel on Climate Change says Africa will be the continent worst hit by higher temperatures. But some bits of Africa may deteriorate more, whereas others may benefit from greater rainfall.

Africa's demand is high, but there is widespread agreement that the continent should get help to adapt to climate change. Some think cash reparations are the right way to go. Others reckon it would be more practical (and less costly) to help to build sea defences for the Niger and Nile deltas and to protect Congo's rainforest.



## Germany's elections

## Not yet in Angela Merkel's bag

Sep 3rd 2009 | BERLIN AND HANOVER  
From The Economist print edition

**Three state elections suggest that the outcome of the federal election on September 27th may be less certain than it once seemed**

Reuters



"THAT wasn't as boring as I thought it would be," exclaimed Gudrun Giesmann, a supporter of the Social Democratic Party (SPD), after watching Frank-Walter Steinmeier at a rally in Hanover. Mr Steinmeier, now foreign minister, has less than a month left to try to unseat Angela Merkel as chancellor after Germany's federal election on September 27th. A former bureaucrat, he is a novice politician but his campaign performances are improving, as Ms Giesmann noticed. His plea for a "strong SPD" was combative, almost rousing.

It came after three state elections had given a glimmer of hope to the SPD, trailing Ms Merkel's Christian Democratic Union (CDU) by over ten points. On August 30th the CDU suffered stinging defeats in Saarland and Thuringia. It remains the largest party in both states, but it may be forced out of power by the SPD with the Greens and the ex-communist Left Party. Only in Saxony can the CDU form a "black-yellow" coalition with the liberal Free Democrats (FDP), a partnership Ms Merkel hopes to replicate at federal level.

That does not mean that the SPD will close the gap before election day. Ms Merkel is popular: three times as many Germans want her to remain chancellor as want Mr Steinmeier to replace her. The SPD rules out co-operating with the Left Party at national level, limiting its coalition options. But the state results suggest that the SPD may be able to block a CDU-FDP alliance and so cling to power as Ms Merkel's junior partner in a continuation of today's "grand coalition". The message is that "black-yellow is not wanted in this country", crowed Mr Steinmeier in Hanover. He is not so much running against Ms Merkel as against the liberal-leaning coalition she aspires to lead.

German voters face a muddy choice. The grand coalition has managed the economy reasonably well during both the upswing and the bust. But it has enacted few bold reforms and even chipped away at earlier ones. It is hard to see a second instalment offering anything new. The black-yellow coalition that Mr Steinmeier reviles would stop the reform rollback and might attempt new ones in welfare and health care. Germany's natural consensus-seeking will temper anything such a coalition dreams up, but the change in attitude could be profound.

Ms Merkel's strategy for keeping her job is to pretend that it is not being contested. She ignores SPD salvoes. A CDU-FDP partnership would pull Germany out of recession faster than any other, she insists, though without saying why (and she also backs away from several FDP policies). The CDU's manifesto is a

study in vagueness, so it can either couple with Germany's pro-business liberals or with a party that still espouses "democratic socialism".

Ms Merkel herself has been fuzzy, hoping to woo voters who like her but not her centre-right party. The Saarland and Thuringia defeats have provoked calls for a sharper message from worried CDU leaders. "We won't get there in a sleeping car," grumbled Baden-Württemberg's premier, Günther Oettinger. Ms Merkel has slapped them all down. She sees "no need at all" for a change in strategy.

Mr Steinmeier hopes to transform the election—which has so far felt like an exercise in renewing Ms Merkel's job contract—into a real contest. "We're fighting an election. What about you, Ms Merkel?" read one poster held aloft in Hanover. If allowed to govern with the FDP, she would slash taxes for the rich and vandalise the welfare state, Mr Steinmeier claims. The caricature is unfair, but it could enliven what has been a largely issueless election.

The SPD's big plan is to create 4m jobs by 2020, largely by turning Germany into a "Silicon Valley" of ecologically friendly, export-oriented new industries. The proposed means are less daring: state agencies should buy electric cars, for example. Like all parties, the SPD wants to invest more in education, but it is honest enough to call for higher income taxes on the rich to help pay for it. It couples this with a ringing defence of its traditional pro-worker policies and various wrong-headed ideas for improving the workings of capitalism. It wants to introduce a countrywide minimum wage that would destroy jobs. The SPD would also tax stockmarket trades and oblige investors in companies to wait a year before exercising their voting rights.

The CDU's non-committal manifesto is friendlier in tone to the market and, partly because of what it does not say, more conducive to job creation. But much will depend on its coalition partners (the Greens are a third, if remote, possibility). Black-yellow would be keen to cut taxes (though the FDP promises bigger cuts than the CDU). In place of minimum wages, both parties would shepherd low-skilled workers into jobs through state subsidies to top up their wages. The FDP wants beneficiaries to save more for their own health insurance, but is only faintly seconded by the CDU, keen to avoid suspicions that it is scheming to privatise the system.

Ms Merkel does not want any of these contrasts to become a full-throated war of ideas that she might lose. Her black-yellow preference is at odds with the soothing persona she has adopted for the campaign. She would rather run on her record as leader of a big-tent government that presided over an economic boom and then battled the subsequent slump.

It may help that unemployment looks likely to rise by less than once feared, thanks partly to the coalition's policy of subsidising companies to employ workers part time rather than sacking them. The number of jobless workers rose by a relatively mild 276,000 to 3.5m in the year to August; next year it is expected to breach the 4m mark but remain below 5m. Ms Merkel will no doubt claim the credit.

Even Mr Steinmeier's supporters doubt if he will unseat her. Ms Giesmann says she would not be disappointed if Ms Merkel remained head of another grand coalition. But Ms Merkel is running a risk. If she does not defend a distinctive set of ideas, voters may conclude that they share the SPD's view that she has none. The increasingly feisty Mr Steinmeier will try to corner her when the two meet in a televised debate on September 13th. If Ms Merkel does not define herself, she risks letting her rival define her instead. Re-election is not yet a sure thing.

## France returns to work

## Back from the beach

Sep 3rd 2009 | PARIS  
From The Economist print edition

## The French president looks politically more solid, at least for now

Rex Features

TANNED and rested after his holiday in the south of France, Nicolas Sarkozy returned to Paris this week for *la rentrée politique* with a spring in his step. The summer may have brought a brief health scare for the French president, but on other fronts matters seem to be inching his way.

For one thing, the economic outlook is now somewhat brighter. After four consecutive quarters of decline, GDP grew by 0.3% in the second quarter of 2009. Business confidence has picked up, as has the Paris bourse.

Politically Mr Sarkozy looks more solid than before. He is unchallenged within his own Gaullist political family, and has even won new recruits to it. Two fringe parties, Philippe de Villiers's nationalists and Frédéric Nihous's ruralists, have each said they are ready to hook up with Mr Sarkozy's UMP before regional elections next year. Nor is the president much bothered by the opposition. The Socialist Party put on a show of unity at its annual summer school after a decision by Martine Aubry, its leader, to agree to open primaries for the selection of its presidential candidate for 2012. But the party still lacks credible policies and a single authoritative leader. Ségolène Royal, its defeated presidential candidate in 2007, already behaves as if she were campaigning again.



Fitter for the fights ahead?

Even Mr Sarkozy's poll ratings seem to be recovering. In an August survey by LH2, a pollster, he had gained three points, and the share of respondents with a negative opinion of him had fallen below 50% for the first time since January. The once-manic president now appears calmer and more in tune with public opinion. He has been tough on bankers' bonuses, a stance he now wants the Pittsburgh G20 summit to adopt, and is attacking tax evasion. He is clamping down on criminal gangs.

It could be that Mr Sarkozy's fainting episode in July, after which he was briefly hospitalised, has helped to humanise the hyperactive president in the eyes of French voters. Yet if Mr Sarkozy looks relatively better, he may soon find he needs to be. Unemployment is still rising. The jobless total reached 2.5m in July, a jump of 26% on the same month a year ago. Many young people just leaving school or college have little chance of finding decent work.

At the factory gate the mood is tense, a point seized upon by his political adversaries. This week a court gave six workers at a Continental tyre plant suspended jail sentences for invading and vandalising a local-government office, prompting indignation on the left. Benoît Hamon, the Socialist spokesman, declared himself outraged that "white-collar thieves" were let off with impunity whereas blue-collar workers were punished so harshly.

As always, indeed, the biggest uncertainty lies in the French street. Earlier this year, the unions drew up to 3m people to one lot of protests. Teachers fret about school reforms. As pupils filed back this week, 13,500 public-sector teaching jobs had been cut. There are worries over plans to scrap investigating judges, and to introduce a new carbon tax that will push up fuel and energy prices. Bernard Thibault, leader of the country's most powerful union, is under pressure to flex his muscles ahead of a leadership vote at his union congress in December.

Much depends on Mr Sarkozy's ability to keep simmering discontent under control by soothing the unions and those worried about losing their jobs. He is putting an effort into training and help for the unemployed, particularly the young. Moreover, the popular appetite for mega-protests seems to have waned. Several spring demonstrations flopped, and union leaders are split over whether to call any more. Ever vigilant, Mr Sarkozy invited Mr Thibault to the Elysée Palace this week as one of his first guests of the

season. If the president can keep a lid on disgruntlement through the autumn, that alone would be an achievement to mark the midpoint of his five-year term.

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## Silvio Berlusconi's troubles

## Superman strikes back

Sep 3rd 2009 | ROME  
From The Economist print edition

## The prime minister takes on his tormentors at home—and abroad

"I'M NOT only not sick," said Silvio Berlusconi on September 1st, referring to a hint by his estranged wife. "I'm a Superman!" Like the comic-book hero, Italy's prime minister has been lashing out at his tormentors three months after being thrown on the defensive by a sex scandal.

His latest target is the European Commission, after a spokesman said it wanted clarification of an incident on August 30th, when migrants trying to reach Italy were turned back to Libya. Intercepting migrants is a crucial part of the government's new policy, so this intervention incensed Mr Berlusconi. He declared that, at the next European Union summit, he would demand a ban on all public statements by commissioners and their (presumably redundant) spokesmen. If his proposal that only the commission's president and his spokesman be authorised to speak were not accepted, he said, Italy would bring EU business to a halt.

Brussels is not alone in seeking to hold Mr Berlusconi to account. On August 28th a centre-left daily, *La Repubblica*, disclosed that Mr Berlusconi was suing it for €1m (\$1.4m). Its misdemeanour was to seek answers to ten questions about his private life and its implications for the country. It also emerged that Mr Berlusconi plans to sue a French magazine, *Le Nouvel Observateur*, over an article on the scandals. Other foreign media may be in the firing line.

But the attack that caused the most stir was one from which Mr Berlusconi swiftly dissociated himself. On August 28th his family's newspaper, *Il Giornale*, led with a story about the editor of the Catholic bishops' daily, *Avvenire*, which had censured Mr Berlusconi over his private life. It repeated a claim that in 2004 Dino Boffo had paid a fine for harassing a woman in a case with homosexual overtones. Mr Boffo retorted that he was unjustly convicted.

*Il Giornale* was striking not just at a newspaper, but at one of Italy's most powerful institutions. The leaders of the Catholic church closed ranks in defence of Mr Boffo. A dinner planned by Mr Berlusconi with the Vatican's secretary of state, Cardinal Tarcisio Bertone, was cancelled, as was a proposed meeting with the pope. The Italian bishops expressed "full confidence" in Mr Boffo and, some days later, the Vatican disclosed that the pope had conveyed his "esteem, gratitude and appreciation" to the head of the bishops' conference.

The outcome is a stand-off between the church and Mr Berlusconi. A similar cooling of relations marked the beginning of the end of Italy's previous centre-left government. But Mr Berlusconi has some useful cards to play. One reason for the pope's initiative was to quell reports of differences between the Vatican and the Italian bishops over their (relatively muted) criticism of the prime minister's private life. The pope's own newspaper, *L'Osservatore Romano*, has yet to utter a word of censure.

The Vatican may fear that Mr Berlusconi could retaliate by dropping legislation to restrict living wills or blocking a hostile parliamentary inquiry into the use of mifepristone, an abortion pill. There is also a risk that his secular followers might push a bill to give legal rights to unmarried couples, including gays.

But Mr Berlusconi's strongest card may be an ethical one. On September 1st an Italian court made public details of the sentence against Mr Boffo, which appears to confirm the substance of *Il Giornale's* claim. Two days later, Mr Boffo resigned. The only surprising thing was that Italy's bishops had seen fit to keep him on in such a high-profile and vulnerable position for five full years after his conviction.

## Turkish-Armenian relations

### Football diplomacy

Sep 3rd 2009 | ANKARA  
From The Economist print edition

#### It may take a long time to restore relations between two old enemies

AFTER decades of fierce animosity, are Turkey and Armenia getting closer to peace? This week the two countries announced plans for six weeks of “internal political consultations” before establishing diplomatic ties and reopening their border. Coming after several months of Swiss mediation and arm-twisting by America, the declaration makes reconciliation between Turkey and Armenia a real prospect—but not a foregone conclusion.

Hopes of a new friendship blossomed in September 2008 when Turkey’s president, Abdullah Gul, became the first modern Turkish leader to visit Armenia, for a football World Cup qualifier (which Armenia lost). A full deal seemed imminent in April when the two countries initialled a preliminary agreement, including a plan to reopen the border. This was sealed by the Turks in 1993 in solidarity with their Azeri cousins during Azerbaijan’s short, sharp war with Armenia over Nagorno-Karabakh, a mainly Armenian enclave of Azerbaijan (which Armenia won).



Turkey had earlier insisted that it would not reopen the border until Armenia and Azerbaijan had made peace. But in April it seemed to change tack. The main reason was to stop America’s Congress adopting a resolution to label the mass slaughter of the Ottoman Armenians in 1915 as genocide. It worked: Barack Obama did not use the term in his annual April 24th statement on the anniversary of the killings.

Yet days later the Turkish prime minister, Recep Tayyip Erdogan, reverted to previous policy by insisting that peace with Armenia would come only if the Nagorno-Karabakh conflict was solved. The switch back reflected nationalist reaction at home as well as Azerbaijan’s threat to turn towards Russia. Armenia’s president, Serzh Sargsyan, retaliated by saying he would not attend a return football match in Turkey on October 14th unless the border was on the verge of being reopened.

This week’s announcement is calculated to ensure that Mr Sargsyan comes to the match, maintaining the façade of reconciliation. By careful coincidence the time for internal political consultations ends just before the match. Links of various sorts between the two countries are growing fast and Armenian tourists have been flocking to the Turkish coast. Yet hostility to a deal from opposition parties in both countries is strong.

Armenia’s hardline nationalists are furious that the government has agreed both to the present border and to a joint historical commission that might yet call the genocide into doubt. They also accuse Mr Sargsyan of selling out Karabakh. Even if the April 22nd deal is accepted, another hurdle has been raised: both countries’ parliaments must agree. To stifle domestic anger (and perhaps embarrass the Turks) Armenia also chose to publish the full text of the agreements in April. They do not mention Nagorno-Karabakh.

Turkey’s response has been contradictory. Its foreign minister, Ahmet Davutoglu, insists that he hopes that the border will be reopened by the end of the year. But he also says that peace with Armenia is sustainable only if it makes peace with Azerbaijan. Long-running talks between Armenia and Azerbaijan seem to be going nowhere. Mr Davutoglu’s most accurate assertion may be that Turkey and Armenia are at the start of a “long process.” How long is anybody’s guess.



## Greece calls an election

### Socialist hope

Sep 3rd 2009 | ATHENS  
From The Economist print edition

#### The Socialists may win, but a new government might not last long

AFP



Karamanlis goes to the country

PUNDITS in Athens were not all that surprised when Costas Karamanlis, the Greek prime minister, announced that he would call a snap election next month, halfway through his four-year term. The opposition Panhellenic Socialist Movement (Pasok) led by George Papandreou is ahead by six points in the polls, so Mr Karamanlis seems set for a spell in opposition. His announcement, on September 2nd, duly infuriated some in his centre-right New Democracy party. "What am I to tell my voters? That we're just surrendering power?" spluttered one backbencher.

But with a bare two-seat majority in parliament, the conservatives have been clinging to power in undignified fashion. After five-and-a-half years in office, Mr Karamanlis looks tired. A string of corruption scandals (one, over the sale of church property, involved his closest aide) have undermined his authority.

Recession looms, with the economy projected to shrink this year. Tourist receipts are forecast to fall by 15-20%. Germans have stayed at home; Britons have headed for cheaper Turkey or Croatia. The global downturn is cutting Greek shipping earnings. The budget deficit may hit 6-7% of GDP this year.

Unrest simmers close to the surface. Last December's riots in Athens led to the emergence of new extreme-left groups. This week a car bomb damaged the Athens stock exchange. In Thessaloniki, another bomb went off outside the ministry for northern Greece. The recent forest fires have reinforced a sense of drift; local mayors were quick to blame the government for not reacting faster.

Yet, despite popular dissatisfaction with New Democracy, the polls suggest that Pasok may not win an outright majority in the 300-seat parliament. Mr Papandreou, a former foreign minister who reached out to Turkey, is mistrusted by his party's old-fashioned nationalists. Younger voters may prefer the Greens (who won a seat in the European election in June) or Syriza, a left-wing splinter group run by Alexis Tsipras, a fast-talking, 30-something biker.

The government that takes over after the election, which will probably be on October 4th, may be short-lived. Parliament is due to vote for a new president next March, and Pasok is unlikely to command the three-fifths majority required. If no president is chosen, another general election would be necessary. Greece may be in for a period of both economic gloom and political instability.

## Russia, Poland and history

## Mr Putin regrets

Sep 3rd 2009

From The Economist print edition

## Russia bandages a wound in Poland



AFP

Remembrance of ugly things past

IT IS hard to imagine modern Germany haggling with Poland about opening wartime archives, let alone over who started the war. With Russia, it is different. Vladimir Putin's visit to Gdansk, where a ceremony this week marked the first shots of the second world war in September 1939, was both a step forward and a depressing sign of continuing difficulties.

Polish officials struggled to stay polite before the Russian prime minister's arrival. In June the Russian defence ministry website argued that Poland had caused the war by provoking Hitler. Last month a Kremlin-controlled television channel claimed that Poland had been conspiring with Nazi Germany against the Soviet Union. Russian intelligence echoed this in a new dossier. And Russia's president, Dmitry Medvedev, denied that the Soviet Union bore any responsibility for the outbreak of war.

Poles find such talk outrageous. The liberation of Poland from the Nazis, in which some 600,000 Soviet soldiers died, is seen as a mixed blessing, as it led to 45 years of ruinous and sometimes murderous communist rule. The country's president, Lech Kaczynski, spoke for many when he reminded Mr Putin that the Soviet Union had "stabbed Poland in the back" with its own invasion on September 17th 1939. He compared the wartime Katyn massacre of 20,000 captured Polish officers by Stalin's secret police to the Holocaust. When the president's twin brother, Jaroslaw, was prime minister, such blunt talk put relations with Russia (and with similarly detested Germany) into the deep freeze.

Since he became prime minister in 2007, the emollient Donald Tusk has made friends with Germany and is now thawing relations with Russia too. He hoped that inviting Mr Putin to Gdansk with the German chancellor, Angela Merkel, would make it impossible for the Russian leader to promote a Soviet-style version of history. Poland's own account of its history may never quite chime with its neighbours'. But disagreements with Germany—chiefly over post-war expulsions of ethnic Germans—are manageable. With Russia, history is an open wound.

Mr Putin lightly bandaged it without admitting any responsibility. He called Katyn a "crime" and said that there were "good reasons" for condemning the 1939 Molotov-Ribbentrop pact between Nazi Germany and the Soviet Union (secret protocols to that deal divided up eastern Europe). But he did not use the unambiguous language that Poles had hoped for. He said the pact was one mistake among many, likening it to the Munich agreement of 1938 when Britain and France bullied Czechoslovakia into accepting dismemberment (a dismemberment, Mr Putin spikily pointed out, in which Poland participated).

Today Munich is seen as a shameful low point in British diplomacy. Few Russians see the Molotov-Ribbentrop pact that way. Indeed, no sooner had Mr Putin finished speaking than Konstantin Semin, a

presenter on Russia's official television station, said "we have nothing to repent of and we should not apologise to anyone: the pact was the only possible solution, which preserved the lives of Poles, among others." He also doubted the authenticity of the pact's secret protocols.

Even the hoped-for declassification of Soviet archives is proving inconclusive. Mr Putin said this would go ahead, but only on a strictly mutual basis. That may be tricky: Poland's wartime archives are already declassified—and somewhat scanty, not least thanks to Russian visitors.

Charlemagne

## Turkey's circular worries

Sep 3rd 2009

From The Economist print edition

**It is increasingly hard to pretend that Turkey's negotiations with the European Union are on track**

Illustration by Peter Schrank



TURKEY'S friends inside the European Union believe that history is on their side. Ask these national politicians, diplomats and EU officials if they think Turkey will one day achieve full membership, and they answer that it must. In a decade or two, they say, objections to Turkish entry will look trifling, next to the country's strategic benefits as an energy hub, regional diplomatic power and bridge to the Muslim world, not to mention as a dynamic economy filled with young people.

Yet when it comes to the glacial pace of Turkey's formal membership negotiations, those same friends are starting to sound the alarm. When talks began in October 2005, the popular notion was of a virtuous circle. Turkish reformers would use the EU process to push through changes that would transform the country. This would reassure Europeans, bring EU membership closer, strengthen the reformers and so on. In one of those polished phrases much beloved of diplomats, it was murmured that, for Turkey, the "journey is as important as the destination".

Yet it turns out that, for the journey to go on, those embarked on it must also believe in the destination. Turks read newspapers. They know that European leaders like France's Nicolas Sarkozy think it is time to stop "lying" to Turkey about full membership. Turkey is in "Asia Minor", Mr Sarkozy says; he will not be the one to "tell French schoolchildren that the borders of Europe extend to Syria and Iraq." The danger of such rhetoric is clear: doubt the EU's sincerity and the circle turns from virtuous to vicious.

Complying with EU environmental law could cost €140 billion (\$200 billion), says Cengiz Aktar, a professor at Bahcesehir University. No country would spend that without a clear path to membership. Some demands are pushy. One EU benchmark involves opening Turkey's public-procurement market to European firms. That market is worth around €60 billion a year, says Mr Aktar. It is not going to open "while Sarkozy is going around saying Turkey will never be a member." Thus reforms slow—and Turkey's opponents inside Europe duly proclaim they were right all along and the country is unfit to join.

An independent commission of pro-Turkey bigwigs, led by a former Finnish president, Martti Ahtisaari, will publish a progress report on September 7th. They do not mince their words. Actions by "some European leaders", they say, have "all but derailed the process." At the same time, there has been a "regrettable" slowing of reforms inside Turkey. Add in polls that show growing Euro-disillusionment inside Turkey, and a

"vicious circle" is upon us, Mr Ahtisaari and his colleagues conclude.

Out of the 35 "chapters" in the accession talks, only one has been completed. Eight are formally blocked because Turkey has not kept an agreement to open its ports and airports to traffic from Cyprus, an EU member since 2004 (Turkey does not recognise the Greek-Cypriot republic and insists that Turkish north Cyprus is being unfairly blockaded). The reunification of divided Cyprus would unblock this impasse. Promising peace talks began in 2008 under a new Cypriot president, Demetris Christofias. Yet it is now "hard to trace" a sense of urgency on the Greek-Cypriot side, says an official. This could cost the president of Turkish northern Cyprus, Mehmet Ali Talat, his job: he faces an election next year, and hardline opponents are circling. The European Commission must also report to EU governments in December on Turkish compliance with its port-opening promise. The report may set the scene for a big new row.

Mr Ahtisaari's commission calls for carping European politicians to shut up, more or less, and stick to EU promises to judge Turkey's membership application purely in terms of compliance with EU rules and values. The problem is that it is hard to see such politicians shutting up. In places like Austria, Germany, the Netherlands and France, Turkey-bashing is a vote-winner.

## **Finnish common sense**

Ask him in person, and Mr Ahtisaari, who won a Nobel peace prize for mediating in such tough spots as Kosovo, suggests that a bit of time may sort this out. Mr Sarkozy will not be around forever, and Turkey's membership talks will take years, he says. "Having once been a president, I tend to say: presidents come and go." The key is for Europe to keep its word, and allow the talks to continue. Other senior figures are more nuanced. The good news, maintains one, is that the Turkish elite still appears to believe in the membership talks. The main Turkish opposition party seems to be more EU-friendly than before. Recent government concessions such as the opening of a Kurdish-language television channel should gain credit with the EU, as will recent signs of a Turkish-Armenian rapprochement.

But the bad news is that Mr Sarkozy means what he says. Sources talk of "serious moves" by France to open a discussion with Turkey next year about alternatives to membership, to "put the cards on the table for the Turks". France would want German backing before making such a move. The forthcoming election in Germany is likely to produce, as now, a coalition government that is divided on the Turkey question. That may help Turkey, as it ties Germany to the status quo of letting the talks go on.

Mr Aktar suggests that individual EU countries which back Turkey should name an unofficial target date for entry: perhaps 2023, the centenary of the Turkish republic. The whole EU would never agree to a deadline, he recognises, but even the idea of an end-point would helpfully boost morale.

It is an intriguing suggestion. On the EU side, the passage of time can be expected to make the case for Turkish entry stronger. Yet in Turkey the slow pace of talks is reducing the chances of success. If Europeans and Turks can meet somewhere in the middle, they might just make history.

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[Economist.com/blogs/charlemagne](http://Economist.com/blogs/charlemagne)

## Reform of the civil service

## Retooling the Rolls-Royce

Sep 3rd 2009

From The Economist print edition

**With budget cuts in the offing, the civil service is under increased scrutiny**

Illustration by Claudio Munoz



IT HAS been a curiosity of British politics in recent years that the party keenest on a big state is also the most dubious about the civil service that staffs it. Governments of all stripes have tinkered with that part of the political system that is traditionally thought both dignified and efficient, and the Conservatives, favourites to win the general election likely to be held next year, will probably be no different. But the current Labour administration has been a particularly restless reformer.

The vaunted wisdom, independence and smooth running of Britain's civil service did not impress Tony Blair on becoming prime minister in 1997. He found Whitehall complacent and amateurish, and strove to make it more a deliverer of public services than a dispenser of advice. New units for strategy, delivery and innovation were set up at the centre of government. Rafts of ultra-specific targets were devised to keep track of performance. Politically appointed "special advisers" multiplied, giving elected ministers more control over the bureaucracy. Management consultants were drafted in to add technocratic know-how to patrician generalism. Gordon Brown, Mr Blair's political partner as chancellor of the exchequer and then his successor in Number 10, is no champion of Whitehall either.

Others say the problem is the growing centralisation of power, pursued by Margaret Thatcher (in office when the BBC's popular "Yes Minister" comedy series first pitted wily civil servants against floundering politicians) and accelerated under Labour. In recent testimony before a House of Lords committee, four former cabinet secretaries—heads of the civil service—lamented the rise of the "do-it-all prime minister", the decline of cabinet government and the proliferation of special advisers. These changes not only violated the old Whitehall way, they said, but also made for bad government.

It is a charge that resonates beyond romantics who recall the post-war golden age of cabinet government when Whitehall was a collection of ministerial baronies, each run by a big beast and overseen by a prime minister who was merely *primus inter pares*. Even Sir Michael Barber, once head of Mr Blair's delivery unit, admits the limits of central direction. And Whitehall compares well with some bureaucracies abroad. According to research by the Institute for Government, a think-tank, based on the World Bank's measures of government effectiveness and the Bertelsmann Management Index, Britain outperforms the likes of France and Japan (though it has much to learn from Scandinavia, Canada, Australia and New Zealand). Its



civil servants command high levels of public trust and confidence at home and envy among some EU colleagues (see [article](#)).

But famous examples of maladministration—such as the troubled introduction of a new IT system for the National Health Service, chaos in the allocation of rural payments and tax credits, and ill-drafted private-finance initiatives—seem to justify concern. Sir Gus O'Donnell, the cabinet secretary, has been happier to shine a light on Whitehall's shortcomings than his predecessors. The capability reviews that he instigated in 2006 have exposed particular failings in delivery, where no department has been rated "strong", though there have been improvements since the reviews (which Lord Wilson, a predecessor, regards as "self-flagellation") began.

Work by the Institute for Public Policy Research, a centre-left think-tank, has also debunked the idea of Whitehall as a purring Rolls-Royce. Its main criticisms—tolerance of underperforming staff, lack of training in specific skills, hostility to change—are those that have dogged Whitehall since the mid-19th century, when bureaucratic failures during the Crimean War led to major reforms.

Some of the mandarins' grumbles seem overdone. Whatever Mr Blair's Napoleonic style, a much smaller percentage of Britain's bureaucrats are based at the very centre (that is, in and around Downing Street) than is the case in Canada, France or the Netherlands, according to the Institute for Government. Jonathan Powell, a former aide to Mr Blair, says that the cabinet has been thought too unwieldy a forum for decision-making since the 1970s. And special advisers—of whom cabinet ministers are generally allowed two, and ordinary ministers none at all—would need fiendish brilliance to exert their supposed influence over much more numerous civil servants.

Though Britain's system of government does give the prime minister and his ruling party a tighter grip on power than, for example, America's executive enjoys, it is not obvious that "politicisation"—the menace invoked whenever changes to Whitehall are proposed—is always bad. Labour ministers reputedly feel now that their civil servants are saving their ideas and energy for the Conservative government that is likely to be elected next year. Political appointees would have no incentive to do this.

In any case, there is already a move away from the *dirigiste* target culture of the Blair years. Indeed, some Conservatives regard the calibre of civil servants as a moot point, as the party's plans to devolve power to local government and community groups will diminish the amount of work done by Whitehall anyway. But some of the worst maladministration takes place in areas such as defence procurement that cannot be devolved. And the very process of giving power away requires civil servants to have certain skills, such as contracting with private and voluntary providers. Work by Reform, a centre-right think-tank, suggests that management consultants in Whitehall have failed to deliver results because the bureaucrats who commission them fail to manage them properly.

Despite their disdain for Labour's "sofa government", the Tories are not wide-eyed about Whitehall. Recruiting outsiders to fill senior bureaucratic posts, instituting tougher performance management and radically shrinking the number of civil servants are ideas that have piqued their interest. They would rightly fear bureaucratic hostility to change, after the mandarins' recent outburst. But they may be reassured that all four, under first Lady Thatcher and then Mr Blair and Mr Brown, went along with the reforms they now deplore.

## Britain's Eurocrats

## Back in the saddle again

Sep 3rd 2009 | BRUSSELS  
From The Economist print edition

## A scheme to groom EU high-flyers returns

GUIDED by tabloid headlines, the British reserve a special contempt for "barmy Brussels bureaucrats". If a new Whitehall plan works out, more of those Eurocrats will be British in the future (and thus, with luck, less barmy). Later this month, the civil service will begin accepting applications for a resurrected "European fast stream", a special career track designed to plant bright young Britons throughout the European Union's administrative machinery.

Candidates with good French or German will be trained in government departments with a strong EU bent, from the Foreign Office to the Department for Environment, Food and Rural Affairs. They will be given EU-related postings and a six-month internship at the European Commission. Their training will include coaching for the EU institutions' fearsome *concours* (recruitment tests). Ten graduates will be chosen each year.

This decision ends a disastrous period during which Whitehall gave the impression of hoping the EU would go away, if it were ignored long enough. The original European fast stream was founded under a Conservative government in 1991. In its heyday it recruited 30 high-flyers a year. In 2007 it took in just three graduates before being suspended. At the time, its closure was described as "insane" by one top Eurocrat, and as "great news for the rest of us" by a diplomat from another country. The problem was lack of interest back home. Whitehall departments discouraged their best people from applying for stints in Brussels, it was said, seeing the EU as a nuisance at best.

Britons currently fill almost one in ten top commission jobs: not bad for a country with 12% of the EU's population. But many of those Euro-mandarins are nearing retirement. Lower down the career ladder, the British vanish from view. In July Britain's permanent representation to the EU compared the nationality of all commission officials with the population of their home countries to see who was over- or under-represented. With 837 out of nearly 13,000 posts analysed, Britain came 26th out of 27 member countries. Only Romania was worse off. France was marginally under-represented, but did almost twice as well as Britain.

The rewards are subtle, insiders say. British officials are less quick to regulate, and can give advance warning of tricky proposals. In negotiations, they are understanding of quirks. Diplomats in Brussels recall an occasion when Britain was seeking to ease emissions rules for tractors that haul lifeboats up British beaches. Buoyancy aids leave no room for fitting catalytic converters, and there are only 30 tractors, Britain's man at the table pleaded. The commission representative opposite him was also a Briton—the exemption went through.

Illustration by Claudio Munoz



## Gordon Brown's Lockerbie problem

## Nowhere to hide

Sep 3rd 2009

From The Economist print edition

## In trying to dodge trouble, the prime minister has made it worse

GORDON BROWN has disappeared at moments of political crisis before, but rarely has crisis been so determined to find him. The controversial decision last month to release from prison on compassionate grounds the cancer-stricken Abdelbaset al-Megrahi, convicted of the Lockerbie airline bombing of 1988, was initially a problem for Alex Salmond and Kenny MacAskill. The first minister and justice secretary, respectively, of the devolved Scottish government that let the Libyan terrorist go remain embroiled in its aftermath (see [article](#)). But attention has inexorably crept south and settled on the question of just how and how much the British government was involved in the case.

Mr Brown's five-day silence on Mr Megrahi's release was broken on August 25th when he deplored the rapture in Tripoli that greeted the killer of 270 people. To the astonishment of those opposed to the release, including the main opposition parties in Westminster and the American government, he did not say whether Mr Megrahi should, in fact, have been set free, noting that such matters were exclusively the business of Edinburgh.

But events have filled the gap. On September 1st Edinburgh and London released hundreds of documents pertaining to Mr Megrahi. Libyan officials, seeking Mr Megrahi's transfer to a prison in their country, claimed to have warned their British counterparts that bilateral relations would suffer were he to die in a Scottish jail. By way of reply, a British minister told the Libyans that neither Mr Brown nor David Miliband, the foreign secretary, wanted such a death but that the matter was for the Scottish authorities to decide. On September 2nd Mr Miliband confirmed that this had been the message. Later that day Mr Brown grudgingly let it be known that he respected the decision to release Mr Megrahi.

All this fed suspicions that the British government had struck a deal with Muammar Qaddafi's regime, agreeing to put pressure on the Scots to release Mr Megrahi in return for continued good relations with the oil-rich and strategically important country. Correspondence between London and Edinburgh offered further grounds for doubt. Jack Straw, the British justice secretary, who initially supported Scottish ministers in wanting to exclude Mr Megrahi specifically from any prisoner-transfer deal with Libya, failed to secure the exception. He reminded Mr MacAskill in December 2007 of the "overwhelming interests for the United Kingdom" in concluding negotiations on the prisoner-transfer agreement (PTA). In February 2008 he pointed out to Mr Salmond that Libya was "one of only two countries to have ever voluntarily and transparently dismantled its weapons of mass destruction".

There is no proof of explicit lobbying from London, however (and in the event Mr Megrahi was not transferred under the PTA). On September 2nd Mr Brown emphatically denied that he and his colleagues had either twisted Scottish arms or struck a tacit bargain with Mr Qaddafi. And though it would be a brave government that made the case publicly, *raison d'état* may have justified the release in a way that compassion did not. After all, British lives would have been risked had Libya reverted to backing anti-Western terrorists. And Libya has reportedly provided much useful intelligence.

Less forgivable would be abusing the trust of an ally, as some suspect the government has. In 1998 Britain agreed with America, which lost 189 citizens over Lockerbie, that anyone convicted of the atrocity would serve his sentence in Scotland. The Americans had argued this year to London and Edinburgh that shipping Mr Megrahi back to Libya under the PTA, signed in April, would breach that commitment, which the British had come to regard as a mere "political understanding". Some also wonder whether British ministers, while indicating to the Libyans that they did not wish to see Mr Megrahi die in Scotland, were saying something else to the Americans. Mr Miliband denies this.

Mr Brown has inherited the British-Libyan *rapprochement* engineered by Tony Blair. Even if he was happy for Mr Megrahi to be transferred, that is not the same as actively working for his release. And though they talk a good game, it is hard to be sure that the Conservatives would really have put principle over Libya's immense commercial and strategic value. In short, there is a reasonable case in defence of Mr Brown. If

only he had made it earlier.

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## Lockerbie and Scottish politics

### A dream fades

Sep 3rd 2009 | EDINBURGH  
From The Economist print edition

#### The release of the bomber has dampened the nationalists' appeal

IT WAS supposed to be so different. Alex Salmond, first minister of Scotland's devolved government and leader of the Scottish National Party (SNP), must have expected to grab the limelight this week with the launch of a bill to permit a referendum on Scottish independence next year. Hardly anyone even noticed. The long shadow of Lockerbie has dimmed prospects for both independence and Mr Salmond himself.

Two weeks after the Scottish justice secretary, Kenny MacAskill, announced the release of Abdulbaset al-Megrahi, the Libyan convicted of the 1988 Lockerbie bombing, the row shows no signs of abating. On September 2nd the Scottish Parliament refused to support his decision. Opposition MSPs defeated the proposed expression of confidence by 73 votes to 50. Fortified by polls suggesting that more than half of all Scots object to Mr Megrahi's release, they argued that it was a bad decision, badly made.

Whether bad or good, the decision remains mysterious. Official correspondence released on September 1st shows that Scotland fought tooth and nail for almost two years to have Mr Megrahi excluded from the bilateral prisoner-transfer agreement that Britain and Libya were negotiating, only to let him go last month under a 1993 law that permits compassionate release in Scotland.

Explaining it, Mr MacAskill clung as much to the rules as to the compassionate moral high ground. There are certain conditions for release, one of which is that a prisoner has only three months to live. The unanimous view of Scotland's prison and medical authorities was that Mr Megrahi, suffering from prostate cancer, met that and other requirements. (The quality of the medical advice is being questioned as Mr Megrahi's plans to write his memoirs are aired.) Previously, 30 prisoners who applied for compassionate release were freed; none of the seven who were refused had unanimous backing from the authorities.

Yet doubts remain. Mr MacAskill rejected a bid to transfer Mr Megrahi to a Libyan prison because, he said, the American government and victims' families believed the British had agreed before the trial that anyone found guilty would serve his sentence in Scotland. MSPs wondered why this reasoning had not ruled out compassionate release.

Rumours of some secret deal are rife. But though Scottish firms do have interests in Libya, and Scotland almost certainly wants a bigger subsidy from London, politics may matter more than economics. One of Mr Salmond's first acts on taking office in 2007 was to complain that Tony Blair had promised Libya a prisoner-transfer agreement without telling him, though Scotland is autonomous in judicial matters. Relying on Scottish law instead to release the Libyan may have satisfied nationalist feeling.

But that does not explain why Mr Megrahi was let go under any law. Some argue that it may have seemed a chance to stake out an independent foreign policy. Though attention has focused on America's hostile reaction, the Libyan view is also striking. In an interview with the *Herald*, a Scottish newspaper, Saif Qaddafi, the son of Libya's ruler, said Mr Megrahi's release had made Libyans and Arabs think of the British and Scottish as more "merciful and more civilised" and less as Islam-hating "crusaders".

A nice thought, but it is not doing Mr Salmond much good. A YouGov poll on August 27th found that only 28% of Scots would vote "yes" on independence and 57% "no", a much wider gap than when the question was put in April. In another YouGov poll, support for the SNP itself was also down, to 26% on August 30th in national elections from 31% in June. So dies the dream.

Reuters



**Salmond and MacAskill need divine aid**

## Flourishing tourism

### Pulling them in

Sep 3rd 2009 | DOVER  
From The Economist print edition

Thanks in part to recession, tourism is doing its bit for Britain

English Heritage



"THERE shall be justice in this land!" Henry II waves his sword over a crowd of giggling children and their parents in the brightly decorated king's hall of Dover Castle. In August the castle keep reopened after a £2.5m re-creation of the interior financed by English Heritage (EH), a conservation quango, and Sea Change, a seaside-regeneration project. The aim was to show the keep as it might have looked in the 12th century, bright-blue furniture contrasting with the deep red of an 180-foot tapestry depicting the Norman conquest. The real Henry II built it to wow pilgrims on their way to Canterbury.

It still impresses today. Since the reopening, the number of visitors to Dover Castle has boomed, as has heritage tourism across Britain. Other sites, such as the tomb of Thomas à Becket (whom Henry unwittingly had killed) at Canterbury Cathedral, are doing well too. EH properties saw 22% more visitors pass through their doors in July than in the same month a year earlier. The National Trust, EH's private-sector equivalent, also saw a rise in visitors of 8.3%, and bookings for its holiday cottages were up by 7%. Back at the castle, around a third of visitors become members of EH despite the cost (as much as £75). Members usually renew for several years, says EH, and tend to visit lots of other sites to get more for their money.

All this seems unequivocal good news for the tourism industry, Britain's fifth-largest (Deloitte, an accounting firm, reckons it contributed 8.2% to GDP in 2007, directly and indirectly). But EH has been criticised for "dumbing down" its attractions to widen its appeal beyond the educated folk who traditionally make up most of its audience. Displays and guidebooks, fume the party-poopers, have been rewritten to suit ten-year-olds. But there is little evidence of this at Dover Castle, where the actors in the king's hall convey the development of trial by jury in Plantagenet England without glossing over the hard bits.

The heritage business is riding the coat-tails of a general boom in domestic tourism, a result of the recession and a weaker pound. Many of the visitors to castles and stately homes are natives forced to holiday at home by financial necessity. The number of Britons travelling abroad fell by 17% in June compared with a year ago. Despite a last-minute surge in bank-holiday bookings, the Association of British Travel Agents says foreign-travel reservations dropped 10% this summer.

Denied the sunnier climes of the Mediterranean—and turned off by decaying seaside towns such as Blackpool—Britons are also flocking to more populist destinations like those run by Butlins, a cheap and cheerful holiday outfit, which has invested £100m in its facilities over the past six years. Bookings have risen by 10% this summer, and the state-of-the-art Ocean Hotel in Bognor Regis, Butlins' newest venue, is booked solid. Caravanning holidays have also had a boost; the Camping and Caravanning Club reports that business this summer is up by almost a third.



The weak pound that keeps Britons at home is also luring foreign holidaymakers to their shores. Business visits to Britain plummeted 25% in the first half of 2009 but visits by foreign tourists rose by some 200,000 (see chart), or 4%. Upmarket attractions in the south-east, including Dover Castle, say that they are being flooded by Europeans. Visits from Austria have risen by a whopping 55%, from Germany by 44% and from France by 24%.

Despite the boom, Britain is still running a £17.6 billion deficit in tourism. That is an improvement on the £19.9 billion shortfall last year but it compares poorly with the surpluses enjoyed by Spain, France and Italy. Nor is it clear how long the boom will last: as the economy recovers Britons may be tempted away from their stately homes and Butlins' karaoke nights—back, in fact, to the Mediterranean beaches they used to haunt.



## Lessons from Lehman

### Turf woes

Sep 3rd 2009

From The Economist print edition

#### Who can ensure that the nightmare won't happen again?

A YEAR ago on September 15th Lehman Brothers International (Europe)—LBIE, the London subsidiary of Lehman Brothers Holdings, New York—closed for business, leaving 839,000 failed transactions totalling billions of dollars hanging in the air. PricewaterhouseCoopers (PWC), the administrator, is still trying to sort out most of them, which relate to over 100 separate units of LBIE. It has managed to pay claims of around \$13 billion (£8 billion) but wants the American parent to settle up to \$100 billion more. That may result in litigation, says Tony Lomas, a partner at PWC.

In the global Lehman debacle, the British authorities and claimants on the London entity drew the short straw. Lehman Brothers Inc, the broker-dealer in New York, was a relatively simple company. It siphoned billions from the global group days before it went bust. The American authorities then gave it until September 19th to settle its trades. Many of its clients' assets were insured. Barclays, a British bank, bought the business and took over its customer positions, ensuring continuity.

LBIE, a complex investment bank, offered no such comfort. Its trades included huge off-exchange dealings in securities and derivatives. Many of its clients' assets had been lent or pledged to third parties by the bank itself, in some cases without clients' knowledge and perhaps without their permission: sloppy records leave plenty of room for doubt. Administrators have had to fight for access to information from Lehman New York, and from securities depositories worldwide.

Clearing this up will take years. It may seem merely technical, but the mess says much about the problems of being a global financial centre, where foreign teams come to play and the home referee deals with the damage. The Financial Services Authority, unable to control the liquidity of this operator on its turf, proposed in March that host countries be given more power to demand extra capital and restrict intra-group flows. That might also reduce the chances of another retail fiasco like that of the Icelandic banks, whose failure in 2008 left an online offshoot owing British depositors £2.3 billion. On August 28th Iceland agreed to repay them, helped by an IMF loan.

In May Britain's Treasury produced a consultation paper on better resolution of such situations. The proposals range from a special insolvency regime for investment banks (there is none now) to tightening up the clearing and settling of trades, and the handling of clients' assets. Banks, lawyers and accountants want fixes to be minimal and market-driven. Most believe that the Special Resolution Regime for retail banks, included in a new Banking Act this year, should be extended to investment banks.

Uncertainty about clients' assets is the burning issue, though Deborah Sabalot, a regulation lawyer, insists that clients themselves should push for more clarity on how these are segregated and protected. Regulators are likely to get no further than they did after the collapse of Barings, a British bank, in 1995. The so-called Windsor Declaration that year resolved to develop "best practices" for handling customer accounts. If implemented, they might have prevented much of the aggravation felt 14 years later in the Lehman workout.

Many see risks in tampering with insolvency law and high costs in ring-fencing client accounts in bankruptcy-proof entities. The trick, practitioners believe, is to assure once-stung investors, especially hedge funds, that Britain is still a user-friendly place. A trip to Brussels on September 2nd by Boris Johnson, London's mayor, to combat proposed anti-hedge fund legislation may not quite clinch it.

## Vice and social class

### Pissed and posh

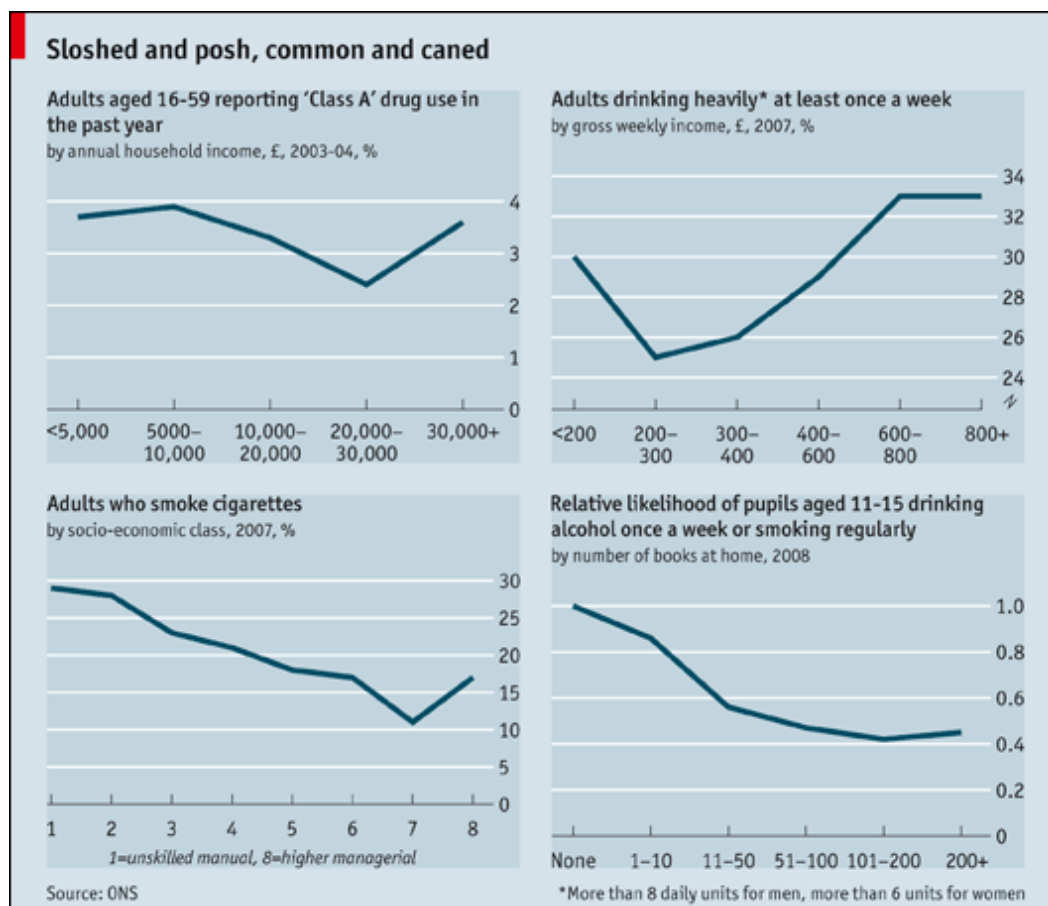
Sep 3rd 2009 | CAMBRIDGE  
From The Economist print edition

#### Cigarettes, drink and drugs dog the poor, but also the well off

"I'M TERRIBLY sorry," begins a well-spoken young woman, "but could I have a swig of your beer? I just can't seem to swallow this MDMA." At a music festival near Cambridge, wickedness is flourishing: pot-smoke fills the air and the fields are littered with empty cans of nitrous oxide. Britain has a well-known love of intoxication, confirmed on September 1st by an OECD report identifying its teenagers as the world's drunkest, among other dubious accolades. Some blame Britain's unequal society and the large underclass that it creates. But the people devouring mind-bending substances in Cambridge are a middle-class bunch, and some are downright posh. Do toffs out-binge plebs?

Both rich and poor have special reason to indulge. Taxes and laws make alcohol, tobacco and illicit drugs pricey, so well-off people can afford them more often than the rest. At the opposite end of the scale, the poor may be more inclined than most to get high: tuning out becomes more appealing as real life gets less enjoyable. DrugScope, a charity, reckons that many of its clients take drugs as "self-medication" for social and psychological problems.

The richer and more successful adults are, the less interested they are in smoking and consuming "class A" drugs (supposedly the most dangerous sort, of which cocaine and ecstasy are the most popular). But among people at the very top of the tree, those habits are more common (see charts). The pattern is similar when it comes to drink: as income declines, so does boozing—except among really poor people, who (on average) put it back with a vengeance.



Class-watchers have often observed that the very rich and very poor have more in common than they

might suppose. (Kate Fox, an anthropologist, claims that this extends to language: anyone asking directions to the “bog” is probably either common as muck or an Old Etonian, she reckons.) Why the similarities?

Perhaps the inequality of British society is less to blame than its immobility. In Britain a father’s income determines that of his son more than in any other rich country, according to an OECD report last year. If your position in life is fixed at the top or bottom, why worry about manners or sobriety? The good behaviour of the middle-classes may reflect the fact that unlike the very rich or poor, their fate—university or not? retire early or never?—is still to play for.

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Bagehot

## Into the vortex

Sep 3rd 2009

From The Economist print edition

### The vertiginous uncertainties faced by the Labour Party

Illustration by Steve O'Brien



TWO years ago, as it entered Britain's politically feverish autumn, the Labour Party was glorying in the gravity-defying poll bounce achieved by its new prime minister. Last year, just as it seemed to be despairing of him, the party was galvanised by the financial crash—convinced, suddenly, that it had rediscovered its purpose. As this year's political season opens, and the end-game of the current parliament begins, the glory has turned out to be vainglorious and the intellectual revival seems to have been a mirage. Labour's platform and its prospects are obscure. It faces multiple and vertiginous uncertainties.

Gordon Brown has finally expressed, under duress, laconic "respect" for the release of Abdelbaset al-Megrahi, the Lockerbie bomber. His long reticence temporarily distracted attention from a bigger lacuna. His government has yet to arrive at a coherent and consistent view of the fundamental issue in British politics: the coming squeeze in public spending. Some senior figures have touted a new approach, in which Labour contrasts its own humane savings with the Conservatives' allegedly heartless axe-wielding. But Mr Brown himself has spent much of the year denying or downplaying the country's fiscal plight, and has not yet adopted the more nuanced strategy. Labour is caught between a necessary but embarrassing climb-down and ongoing delusion.

Beyond this immediate dilemma, other doubts ripple out in concentric rings. Some of them may seem remote, but they have already begun to destabilise the party.

Whether Labour can recover to win the general election due by June 2010 is one of the few aspects of its outlook that seems reasonably fixed. The hope of the more defiant members of the cabinet is that the Tories will wilt in the glare of a campaign; but the constant juxtaposition of David Cameron, their leader, and Mr Brown may have the opposite effect. The Tories' poll lead has stabilised ominously at around 15 points. In the absence of some large, disruptive shock (a new war, serious scandal or the like), a Labour triumph next year seems implausible, and a Tory majority in Parliament very likely. The important ambiguity is rather over the scale of Labour's defeat—how much, for example, will the expenses scandal exacerbate it?—and over the party's interpretation of it. It may prove even more traumatic than the rout inflicted by Margaret Thatcher in 1983 and the savage let-down of John Major's victory in 1992.

For 15 years Labour has been dominated and mesmerised by the Blair-Brown duopoly. When Mr Brown goes, as he is expected to, his disoriented party will inherit no obvious successor. It is easier to say who shouldn't and surely couldn't take over—because they will be too old, too associated with the ancien régime, too demagogic and so on—than who should. Today's best guess is probably that Labour will be led next by someone called Miliband (either David, the foreign secretary, or his brother Ed, the energy secretary). Already the subject of furious exegesis, the manoeuvrings of would-be contenders will become more conspicuous in the months before the election, as they seek allies and alibis to insulate themselves from recriminations after it.

The succession question, however, is only part of a broader struggle to apportion blame for the government's impending demise, a dispute that has already broken out within the Labour movement. It is set to be rancorous and protracted, with one faction keen to bury the Blairite modernisation project, condemning it as apostasy, and another arguing that, on the contrary, it was the betrayal of Blairism that caused the debacle.

At the moment, the most vocal and lively contributions to this row are coming from the party's left, which sees the financial crisis as a chance to advocate more punitive taxation and overt redistribution. Most other Labour thinkers are struggling to adapt their 1990s, jam-for-all model of centre-left politics to the post-crunch era. Unless they do, Labour is in danger of confining its future appeal to its so-called "core vote", either through ideological naivety or as a source of short-term electoral comfort, in the way that the Tories sometimes did after 1997. But the gravest doubt is over how big a core vote Labour can really rely on.

## Peering into the abyss

The map of British politics is changing: fewer people are voting, but for more parties; their votes are less determined by class-based loyalties. With their elastic principles, the Tories will probably adapt to this evolving landscape. But it is not clear how Labour will fit in, as the party's traditional industrial base shrinks and its former Scottish heartland is dominated by the canny Scottish nationalists. In these circumstances, rebuilding an election-winning coalition of voters will be an even greater challenge than the one the party overcame in the mid-1990s.

Because of these trends and pressures, some predict that Labour will sink low enough to become Britain's third party: to the doomsayers, the 16% it scored in the European elections was less a blip than a prophecy. That may be overblown. The last major realignment in British politics was caused by the mega-shocks of the first world war and the subsequent extension of the franchise, which nobbled the old Liberals. But it is not fanciful to think that Labour may suffer several defeats and run through multiple leaders before one of them becomes prime minister.

In Vladimir Nabokov's memoir, "Speak, Memory", he describes coming upon a cat torturing a chipmunk. "Most of his tail was gone," Nabokov writes of the chipmunk, "the stump was bleeding." Finally the creature "lay down on his side in order to merge with a bit of light and shade on the ground". Labour has recently appeared to adopt a similar tactic, seeming to hope inactivity could spare it further torment. It urgently needs to stop playing dead and face its dauntingly uncertain future.

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[Economist.com/blogs/bagehot](http://Economist.com/blogs/bagehot)



## Child welfare

## The nanny state

Sep 3rd 2009

From The Economist print edition

**Lavish public spending on the well-being of children does not always hit the mark**

Report Digital



WHEN the poet William Wordsworth declared that “the Child is father of the Man”, he meant that the gifts of childhood endow adults with some of their finest qualities. And many governments, these days, feel that the path to happiness for society as a whole lies through spending on the welfare of its youngest members: their health, education and general well-being. A report\* from the Organisation for Economic Co-operation and Development (OECD), a rich-country think-tank, scrutinises these efforts and asks if the aim is being achieved.

With its stress on quantifiable facts, the spirit of the OECD report differs from one by UNICEF, the UN children’s agency, in 2007 which made waves by saying children in Britain did badly. UNICEF relied too much on asking youngsters how they felt (did they have “kind and helpful” schoolmates?); the new study stresses meatier things like vaccination and test scores.

With equal rigour, the OECD avoids a single index of child welfare in its 30 member states. Instead, after sifting hundreds of variables, the researchers settled on 21 that coalesce into six categories: material well-being; housing and environment; educational well-being; health and safety; risky behaviour; and quality of school life. Then they ranked countries six times.

What did they find? Some kinds of spending on children do work, but many should be improved or scrapped. No country gets it all right, though some (like the Nordic ones) do better in general than others (notably, America). Government spending per child varies a lot, as do outcomes; but the correlation is not strong.

Hard-pressed parents should not think they are the only ones doling out money to their children: taxpayers foot a hefty bill too. The study says that in 2003, OECD governments spent an average of \$126,000 per child (excluding health) up to the age of 18.

## Not just a matter of money

Public spending and child well-being rankings

	Public spending per child <sup>†</sup> \$'000 PPP <sup>‡</sup>	Rankings out of 30 OECD countries					
		Material well-being	Housing and environment	Educational well-being	Health and safety	Risky behaviour	Quality of school life
Norway	204.2	1	1	16	16	4	2
Denmark	187.4	2	6	7	4	21	8
France	164.0	10	10	23	19	12	22
Britain	145.8	12	15	22	20	28	4
United States	140.0	23	12	25	24	15	14
Australia	121.2	15	2	6	15	17	n/a

Source: OECD

<sup>†</sup>Total up to age 18, not including health <sup>‡</sup>At purchasing-power parity

Some of this money went directly to families in the form of cash benefits and tax credits. Governments also spent heavily on indirect or in-kind provisions like schools and child care. On the whole (with big variations), they spent more money on older children than on under-fives.

There is also huge variance in total spending per child, with just the middle half of the group ranging between \$75,000 and \$175,000. This was not directly linked to the overall wealth of the country. You may guess that rich Sweden is kind to its children, but poorish Hungary is generous, too. Up-and-coming South Korea might be expected to be a bit mean, but the stinginess of Switzerland is unexpected.

Children's lobbies always want more funds, but this report suggests that more money does not reliably yield better results. America has one of the highest levels of spending per child, and among the worst outcomes. In contrast, says Dominic Richardson, an author of the report, Australia spends less, with better outcomes.

So what do countries get for their cash? In measuring education, the report looks at standardised test scores at the age of 15, variability in educational attainment and success after school. Taken together, these measures suggest that seven states—including Canada and Finland—do very well, whereas five—including Greece, Italy and Portugal—do especially badly.

The researchers also found vastly divergent health results. To calculate this, they combined several underlying indices. Three concern birth and the first year of life: infant mortality; birth-weight; and levels of breast-feeding (just 63% in France and 41% in Ireland). Other indicators tracked the immunisation of young children, which was generally high in OECD states, and physical activity among older ones, which was low in Ireland and America.

Putting all the health indicators together, the report finds that a dozen countries from northern and eastern Europe top the chart. Nine states are well below the group average; these laggards include America. It is not just infant mortality, an essential indicator, in which America lags behind (see chart). Though it has the world's most expensive health system and spends more per child than most oecd countries, outcomes are poor. Performance falls behind on several indicators, ranging from birth-weight to teenage pregnancies.

Why does high-spending America fare badly? One explanation is the lack of universal health insurance and the inadequacy of provisions for child health. But American children also fare worse than their European peers in other areas like education and living standard. Over a fifth of American children live in relatively poor households, earning less than half the national average household income.

Subtler factors may be at work. Elizabeth Docteur, a health economist, points to evidence in the report suggesting that America (like Britain and Italy) has a high degree of "persistence of earnings" across generations. On both sides of the Atlantic, rich

children tend to stay rich, but as Ms Docteur says, the poorest American children are considerably more likely than are their European peers to stay poor. The report does show up some unflattering things about America, but its critique is even-handed and empirical. Continental Europeans will hardly welcome its suggestion that they are spending too much money on cherished social-welfare projects, including lavish prenatal care.

The OECD comes to some clear conclusions. Some involve policies that work and should be expanded. For example, conditional cash transfers (like grants for mothers who get a prenatal screening, or child tax credits) are hailed as a way to nudge poorer families toward better health care for children. The study also urges a shift in spending from teenage years to the prenatal period and early childhood.

That conclusion upsets Paul Wise, a child-health expert at Stanford University, who argues that overall spending on child welfare must rise. Though he generally praises the report, he says that shifting spending from teenagers to babies reflects an unhealthy zero-sum mentality.

But the OECD researchers retort that state spending must pass the test of cost versus benefit. Resources are finite, and the best argument for winning new funding for a cause is proof that previous funds have been spent wisely. That points to the report's gravest conclusions—about what governments should stop doing.

Sensibly, its says child benefits should stop at 18: that is not so in, say, Austria. It also argues that universal, "medicalised" pre- and postnatal care—offered in many European states—is wasteful. There is little to suggest that offering copious prenatal exams to healthy pregnant women improves child welfare. Similarly, the study criticises long hospital stays after the birth of a healthy child (in Europe, the average is nearly four days). Better to reduce such benefits, the authors say, and use the resources on mothers and babies at high risk.

The OECD offers many insights into how and why child welfare varies, and what the state can do. It does not, however, settle the argument over what role the state should have in nurturing the young.



\*"Doing Better for Children," Simon Chapple and Dominic Richardson, OECD, Paris, 2009

## Journalists in jail

## The price of truth

Sep 3rd 2009

From The Economist print edition

## For reporters, a moment of fear

SRI LANKA was always a hard place for hacks; but by any standards, 20 years' jail is a harsh penalty for a newsman doing his job. That term was meted out this week to J.S. Tissainayagam on terrorism charges, after he criticised the army's treatment of Tamil civilians. The government says he stoked ethnic discord with false reports; human-rights groups say the state is cracking down harder in an already dire environment. Some 14 journalists have been killed in Sri Lanka since 2006.

All in all, this is proving a bad year for journalists. More are in jail than at any time since the Committee to Protect Journalists, a New York-based advocacy group, began keeping records. Of the 174 held, some may go free soon; but as a crackdown in Iran demonstrates, there is also a risk that more will join them.

Indeed, Iran is chiefly responsible for these ghastly data. At least 41 journalists have been arrested there since the election in June. Some are now free, but the whereabouts of others is unknown.

Iran now holds at least 27 journalists, almost as many as China (30), and more than Cuba (25). Once inside (in Iran especially) things can get worse. Omidreza Mirsayafi, a blogger who was given 30 months for mocking Iran's leaders, died in jail in March. Press freedom is also under attack in Iraq.

The internet, long seen as a way of dodging dictators, can be dangerous. At least 25 bloggers have been arrested this year. The repression of online journalism is intensifying in China, Vietnam, Burma and Iran, says Clothilde Le Coz of Reporters Without Borders, a group that defends journalists.



A Sri Lankan newsman pays dearly

## Monitor

## Keeping pirates at bay

Sep 3rd 2009

From The Economist print edition

**Policing the internet: The music industry has concluded that lawsuits alone are not the way to discourage online piracy**

Illustration by Belle Mellor



THREE big court cases this year—one in Europe and two in America—have pitted music-industry lawyers against people accused of online piracy. The industry prevailed in each case. But the three trials may mark the end of its efforts to use the courts to stop piracy, for they highlighted the limits of this approach.

The European case concerned the Pirate Bay, one of the world's largest and most notorious file-sharing hubs. The website does not actually store music, video and other files, but acts as a central directory that helps users locate particular files on BitTorrent, a popular file-sharing network. Swedish police began investigating the Pirate Bay in 2003, and charges were filed against four men involved in running it in 2008. When the trial began in February 2009, they claimed the site was merely a search engine, like Google, which also returns links to illegal material in some cases. One defendant, Peter Sunde, said a guilty verdict would "be a huge mistake for the future of the internet...it's quite obvious which side is the good side."

The court agreed that it was obvious and found the four men guilty, fining them a combined SKr30m (\$3.6m) and sentencing them each to a year in jail. Despite tough talk from the defendants, they appear to have tired of legal entanglements: in June another firm said it would buy the Pirate Bay's internet address for SKr60m and open a legal music site.

The Pirate Bay is the latest in a long list of file-sharing services, from Napster to Grokster to KaZaA, to have come under assault from the media giants. If it closes, some other site will emerge to take its place; the music industry's victories, in short, are never final. Cases like this also provoke a backlash against the music industry, though in Sweden it took an unusual form. In the European elections in June, the Pirate Party won 7.1% of the Swedish vote, making it the fifth-largest party in the country and earning it a seat in the European Parliament. "All non-commercial copying and use should be completely free," says its manifesto.



## So much for that plan

The Recording Industry Association of America (RIAA) has pursued another legal avenue against online piracy, which is to pursue individual users of file-sharing hubs. Over the years it has accused 18,000 American internet users of engaging in illegal file-sharing and demanding settlements of \$4,000 on average. Facing the scary prospect of a federal copyright-infringement lawsuit, nearly everyone settled; but two cases have proceeded to trial. The first involved Jammie Thomas-Rasset, a single mother from Minnesota who was accused of sharing 24 songs using KaZaA in 2005. After a trial in 2007, a jury ruled against her and awarded the record companies almost \$10,000 per song in statutory damages.

Critics of the RIAA's campaign pointed out that if Ms Thomas-Rasset had stolen a handful of CDs from Wal-Mart, she would not have faced such severe penalties. The judge threw out the verdict, saying that he had erred by agreeing to a particular "jury instruction" (guidance to the jury on how they should decide a case) that had been backed by the RIAA. He then went further, calling the damages "wholly disproportionate" and asking Congress to change the law, on the basis that Ms Thomas-Rasset was an individual who had not sought to profit from piracy.

But at a second trial, which concluded in June 2009, Ms Thomas-Rasset was found guilty again. To gasps from the defendant and from other observers, the jury awarded even higher damages of \$80,000 per song, or \$1.92m in total. One record label's lawyer admitted that even he was shocked. In July, in a separate case brought against Joel Tenenbaum, a student at Boston University, a jury ordered him to pay damages of \$675,000 for sharing 30 songs.

According to Steven Marks, general counsel for the RIAA, the main point of pursuing these sorts of cases is to make other internet users aware that file-sharing of copyrighted material is illegal. Mr Marks admits that the legal campaign has not done much to reduce file-sharing, but how much worse might things be, he wonders, if the industry had done nothing? This year's cases, and other examples (such as the RIAA's attempt in 2005 to sue a grandmother, who had just died, for file-sharing), certainly generate headlines—but those headlines can also make the industry look bad, even to people who agree that piracy is wrong.

That helps explain why, in late 2008, the RIAA abandoned the idea of suing individuals for file-sharing. Instead it is now backing another approach that seems to be gaining traction around the world, called "graduated response". This is an effort to get internet service-providers to play a greater role in the fight against piracy. As its name indicates, it involves ratcheting up the pressure on users of file-sharing software by sending them warnings by e-mail and letter and then restricting their internet access. In its strictest form, proposed in France, those accused three times of piracy would have their internet access cut off and their names placed on a national blacklist to prevent them signing up with another service provider. Other versions of the scheme propose throttling broadband-connection speeds.

All this would be much quicker and cheaper than going to court and does not involve absurd awards of damages and their attendant bad publicity. A British study found that most file-sharers will stop after receiving a warning—but only if it is backed up by the threat of sanctions.

It sounds promising, from the industry's perspective, but graduated response has drawbacks of its own. In New Zealand the government scrapped the idea before implementation, and in Britain the idea of cutting off access has been ruled out. In France the first draft of the law was savaged by the Constitutional Council over concerns that internet users would be presumed guilty rather than innocent. Internet service-providers are opposed to being forced to act as copyright police. Even the European Parliament has weighed in, criticising any sanctions imposed without judicial oversight. But the industry is optimistic that the scheme will be implemented in some form. It does not need to make piracy impossible—just less convenient than the legal alternatives.

But many existing sources of legal music have not offered what file-sharers want. "In my view, growing internet piracy is a vote of no confidence in existing business models," said Viviane Reding, the European commissioner for the information society, in July.

The industry is desperately searching for better business models, and is offering its catalogue at low rates to upstarts that could never have acquired such rights a decade ago. Services such as Pandora, Spotify and we7 that stream free music, supported by advertising, are becoming popular. Most innovative are the plans to offer unlimited downloads for a flat fee. British internet providers are keen to offer such a service, the cost of which would be rolled into the monthly bill. Similarly, Nokia's "Comes With Music" scheme includes a year's downloads in the price of a mobile phone. The music industry will not abandon legal measures against piracy altogether. But solving the problem will require carrots as well as sticks.





## Monitor

## Tilting in the breeze

Sep 3rd 2009

From The Economist print edition

**Energy: A novel design for a floating wind-turbine, which could reduce the cost of offshore wind-power, has been connected to the electricity grid**

StatoilHydro



**Floating a new idea**

FAR out to sea, the wind blows faster than it does near the coast. A turbine placed there would thus generate more power than its inshore or onshore cousins. But attempts to build power plants in such places have foundered because the water is generally too deep to attach a traditional turbine's tower to the seabed.

One way round this would be to put the turbine on a floating platform, tethered with cables to the seabed. And that is what StatoilHydro, a Norwegian energy company, and Siemens, a German engineering firm, have done. The first of their floating offshore turbines has just started a two-year test period generating about 1 megawatt of electricity—enough to supply 1,600 households.

The Hywind is the first large turbine to be deployed in water more than 30 metres deep. The depth at the prototype's location, 10 kilometres (six miles) south-west of Karmøy, is 220 metres. But the turbine is designed to operate in water up to 700 metres deep, meaning it could be put anywhere in the North Sea. Three cables running to the seabed prevent it from floating away.

It is an impressive sight. Its three blades have a total span of 82 metres and, together with the tower that supports them, weigh 234 tonnes. That makes the Hywind about the same size as a large traditional offshore turbine.

Even though it is tethered, and sits on a conical steel buoy, the motion of the sea causes the tower to sway slowly from side to side. This swaying places stress on the structure, and that has to be compensated for by a computer system that tweaks the pitch of the rotor blades to keep them facing in the right direction as the tower rocks and rolls to the rhythm of the waves. That both improves power production and minimises the strain on the blades and the tower. The software which controls this process is able to measure the success of previous changes to the rotor angle and use that information to fine-tune future attempts to dampen wave-induced movement.

If all works well, the potential is huge. Henrik Stiesdal of Siemens's windpower business unit reckons the whole of Europe could be powered using offshore wind, but that competition for space near the coast will make this difficult to achieve if only inshore sites are available. Siting turbines within view of coastlines

causes conflicts with shipping, the armed forces, fishermen and conservationists. But floating turbines moored far out to sea could avoid such problems. That, plus the higher wind speeds which mean that a deep-water turbine could generate much more power than a shallow-water one, make the sort of technology that the Hywind is pioneering an attractive idea.

One obvious drawback is that connecting deep-water turbines to the electrical grid will be expensive. But the biggest expense—the one that will make or break far-offshore wind power—will probably be maintenance. In deep seas, it will not be possible to use repair vessels that can jack themselves up on the seabed for stability, like the machines that repair shallow-water turbines. Instead maintenance will be possible only in good weather. If the Hywind turbine turns out to need frequent repairs, the cost of leaving it idle while waiting for fair weather, and of ferrying the necessary people and equipment to and fro, will outweigh the gains from generating more power. But if all goes according to plan, and the new turbine does not need such ministrations, it would put wind in the sails of far-offshore power generation.

## Monitor

## Span of control

Sep 3rd 2009

From The Economist print edition

**Engineering: A new generation of “smart” bridges use sensors to detect structural problems and warn of impending danger**

WHEN an eight-lane steel-truss-arch bridge across the Mississippi River in Minneapolis collapsed during the evening rush hour on August 1st 2007, 13 people were killed and 145 were injured. There had been no warning. The bridge was 40 years old but had a life expectancy of 50 years. The central span suddenly gave way after the gusset plates that connected the steel beams buckled and fractured, dropping the bridge into the river.

In the wake of the catastrophe, there were calls to harness technology to avoid similar mishaps. The St Anthony Falls bridge, which opened on September 18th 2008 and replaces the collapsed structure, should do just that. It has an embedded early-warning system made of hundreds of sensors. They include wire and fibre-optic strain and displacement gauges, accelerometers, potentiometers and corrosion sensors that have been built into the span to monitor it for structural weaknesses, such as corroded concrete and overly strained joints.

On top of this, temperature sensors embedded in the tarmac activate a system that sprays antifreeze on the road when it gets too cold, and a traffic-monitoring system alerts the Minnesota Department of Transportation to divert traffic in the event of an accident or overcrowding. The cost of all this technology was around \$1m, less than 1% of the \$234m it cost to build the bridge.

The new Minneapolis bridge joins a handful of “smart” bridges that have built-in sensors to monitor their health. Another example is the six-lane Charilaos Trikoupis bridge in Greece, which spans the Gulf of Corinth, linking the town of Rio on the Peloponnese peninsula to Antirrio on the mainland. This 3km-long bridge, which was opened in 2004, has roughly 300 sensors that alert its operators if an earthquake or high winds warrant it being shut to traffic, as well as monitoring its overall health. These sensors have already detected some abnormal vibrations in the cables holding the bridge, which led engineers to install additional weights as dampeners.

The next generation of sensors to monitor bridge health will be even more sophisticated. For one thing, they will be wireless, which will make installing them a lot cheaper.

Jerome Lynch of the University of Michigan, Ann Arbor, is the chief researcher on a project intended to help design the next generation of monitoring systems for bridges. He and his colleagues are looking at how to make a cement-based sensing skin that can detect excessive strain in bridges. Individual sensors, says Dr Lynch, are not ideal because the initial cracks in a bridge may not occur at the point the sensor is placed. A continuous skin would solve this problem. He is also exploring a paint-like substance made of carbon nanotubes that can be painted onto bridges to detect corrosion and cracks. Since carbon nanotubes conduct electricity, sending a current through the paint would help engineers to detect structural weakness through changes in the paint’s electrical properties.

The researchers are also developing sensors that could be placed on vehicles that regularly cross a bridge, such as city buses and police cars. These could measure how the bridge responds to the vehicle moving across it, and report any suspicious changes.

Some civil engineers are sceptical about whether such instrumentation is warranted. Emin Aktan, director

Illustration by Belle Mellor



of the Intelligent Infrastructure and Transport Safety Institute at Drexel University in Philadelphia, points out that although the sensors generate a huge amount of data, civil engineers simply do not know what happened in the weeks and days before a given bridge failed. It will take a couple of decades to arrive at a point when bridge operators can use such data intelligently, he predicts. Meanwhile, the Obama administration's stimulus plan has earmarked \$27 billion for building and repairing roads and bridges. Just 1% of that would pay for a lot of sensors.

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## Monitor

## Keeping a grip

Sep 3rd 2009

From The Economist print edition

**Transport: A new type of tyre, equipped with built-in sensors, can help avoid a skid—and could also improve fuel-efficiency**

FEW sensations of helplessness match that of driving a car that unexpectedly skids. In a modern, well-equipped (and often expensive) car, electronic systems such as stability and traction control, along with anti-lock braking, will kick in to help the driver avoid an accident. Now a new tyre could detect when a car is about to skid and switch on safety systems in time to prevent it. It could also improve the fuel-efficiency of cars to which it is fitted.

The Cyber Tyre, developed by Pirelli, an Italian tyre maker, contains a small device called an accelerometer which uses tiny sensors to measure the acceleration and deceleration along three axes at the point of contact with the road. A transmitter in the device sends those readings to a unit that is linked to the braking and other control systems.

The accelerometers in the Cyber Tyre contain two tiny structures, the distance between which changes during acceleration, altering the electrical capacitance of the device, which is measured and converted into a voltage. Powered by energy scavengers that exploit the vibration of the tyre, the device encapsulating the accelerometers and the transmitter is about 2.5 centimetres in diameter and about the thickness of a coin.

Constantly monitoring the forces that tyres are subjected to as they grip the road could help reduce fuel consumption by optimising braking and suspension. Moreover, it could promote the greater use of tyres with a low rolling-resistance, which are often fitted to hybrid vehicles. These save fuel by reducing the resistance between the tyre and the road but, to do so, they have a reduced grip, especially in the wet. If fitted with sensors, such tyres could be more closely monitored and controlled in slippery conditions.

Pirelli believes its new tyre could be fitted to cars in 2012 or 2013, but this will depend on getting carmakers to incorporate the necessary monitoring and control systems into their vehicles. As with most innovations, these are expected to be available in upmarket models first, and cheaper cars later. But if the introduction in 1973 of Pirelli's steel-belted Cinturato radial tyre is any guide, devices that make cars safer will be adopted rapidly.



## Monitor

## Trappings of waste

Sep 3rd 2009

From The Economist print edition

**Materials science: Plastic beads may provide a way to mop up radiation in nuclear power-stations and reduce the amount of radioactive waste**

Science Photo Library



**They want us to drop beads into the cooling system?**

NUCLEAR power does not emit greenhouse gases, but the technology does have another rather nasty by-product: radioactive waste. One big source of low-level waste is the water used to cool the core in the most common form of reactor, the pressurised-water reactor. A team of researchers led by Börje Sellergren of the University of Dortmund in Germany, and Sevilimedu Narasimhan of the Bhabha Atomic Research Centre in Kalpakkam, India, think they have found a new way to deal with it. Their solution is to mop up the radioactivity in the water with plastic.

In a pressurised-water reactor, hot water circulates at high pressure through steel piping, dissolving metal ions from the walls of the pipes. When the water is pumped through the reactor's core, these ions are bombarded by neutrons and some of them become radioactive. The ions then either settle back into the walls of the pipes, making the pipes themselves radioactive, or continue to circulate, making the water radioactive. Either way, a waste-disposal problem is created.

Because the pipes are steel, most of the ions are iron. When the commonest isotope of iron ( $^{56}\text{Fe}$ ) absorbs a neutron, the result is not radioactive. The steel used in the pipes, however, is usually alloyed with cobalt to make it stronger. When common cobalt ( $^{59}\text{Co}$ ) absorbs a neutron the result is  $^{60}\text{Co}$ , which is radioactive and has a half-life of more than five years.

At present, nuclear engineers clean cobalt from the system by trapping it in what are known as ion-exchange resins. These swap bits of themselves for ions in the water flowing over them. Unfortunately, the ion-exchange technique traps many more non-radioactive iron ions than radioactive cobalt ones.

To overcome that problem Drs Sellergren and Narasimhan have developed a polymer that binds to cobalt while ignoring iron. They made the material using a technique called molecular imprinting, which involves making the polymer in the presence of cobalt ions, and then extracting those ions by dissolving them in hydrochloric acid. The resulting cobalt-sized holes tend to trap any cobalt ions that blunder into them, with the result that a small amount of the polymer can mop up a lot of radioactive cobalt.

The team is now forming the new polymer into small beads that can pass through the cooling systems of nuclear power-stations. Concentrating radioactivity into such beads for disposal would be cheaper than

trying to get rid of large volumes of low-level radioactive waste, according to Dr Sevilimedu. He thinks that the new polymer could also be used to decontaminate decommissioned nuclear power-stations where residual radioactive cobalt in pipes remains a problem.

Nuclear power is undergoing a renaissance. Some 40 new nuclear power-stations are being built around the world. The International Atomic Energy Agency estimates that a further 70 will be built over the next 15 years, most of them in Asia. That is in addition to the 439 reactors which are already operating. So there will be plenty of work for the plastic beads, if Drs Sellergren and Narasimhan can industrialise their process.

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## Monitor

## Air power

Sep 3rd 2009

From The Economist print edition

**Energy: Batteries that draw oxygen from the air could provide a cheaper, lighter and longer-lasting alternative to existing designs**

MOBILE phones looked like bricks in the 1980s. That was largely because the batteries needed to power them were so hefty. When lithium-ion batteries were invented, mobile phones became small enough to be slipped into a pocket. Now a new design of battery, which uses oxygen from ambient air to power devices, could provide even an smaller and lighter source of power. Not only that, such batteries would be cheaper and would run for longer between charges.

Lithium-ion batteries have two electrodes immersed in an electrically conductive solution, called an electrolyte. One of the electrodes, the cathode, is made of lithium cobalt oxide; the other, the anode, is composed of carbon. When the battery is being charged, positively charged lithium ions break away from the cathode and travel in the electrolyte to the anode, where they meet electrons brought there by a charging device. When electricity is needed, the anode releases the lithium ions, which rapidly move back to the cathode. As they do so, the electrons that were paired with them in the anode during the charging process are released. These electrons power an external circuit.



Illustration by Belle Mellor

Peter Bruce and his colleagues at the University of St Andrews in Scotland came up with the idea of replacing the lithium cobalt oxide electrode with a cheaper and lighter alternative. They designed an electrode made from porous carbon and lithium oxide. They knew that lithium oxide forms naturally from lithium ions, electrons and oxygen, but, to their surprise, they found that it could also be made to separate easily when an electric current passed through it. They exposed one side of their porous carbon electrode to an electrolyte rich in lithium ions and put a mesh window on the other side of the electrode through which air could be drawn. Oxygen from the air took the place of the cobalt oxide.

When they charged their battery, the lithium ions migrated to the anode where they combined with electrons from the charging device. When they discharged it, lithium ions and electrons were released from the anode. The ions crossed the electrolyte and the electrons travelled round the external circuit. The ions and electrons met at the cathode, and combined with the oxygen to form lithium oxide that filled the pores in the carbon.

Because the oxygen being used by the battery comes from the surrounding air, the device that Dr Bruce's team has designed can be a mere one-eighth to one-tenth the size and weight of modern batteries, while still carrying the same charge. Making such a battery is also expected to be cheaper. Lithium cobalt oxide accounts for 30% of the cost of a lithium-ion battery. Air, however, is free.

**Monitor**

## The taxonomy of tumours

Sep 3rd 2009  
From The Economist print edition

### **Medicine: A new technique aims to measure the activity of a tumour, and could also help provide a new way to classify cancers**

ONCOLOGISTS would like to be able to classify cancers not by whereabouts in the body they occur, but by their molecular origin. They know that certain molecules become active in tumours found in certain parts of the body. Both head-and-neck cancers and breast cancers, for example, have an abundance of molecules called epidermal growth-factor receptors (EGFRs). Now a team from Cancer Research UK's London Research Institute has taken a step towards this goal. Their technique can already identify how advanced a person's cancer is, and thus how likely it is to return after treatment.

At present, pathologists assess how advanced a cancer is by taking a sample, known as a biopsy, and examining the concentration within it of specific receptors, such as EGFRs, that are known to help cancers spread. Peter Parker had the idea of employing a technique called fluorescence resonance-energy transfer (FRET), which is used to study interactions between individual protein molecules, to see if he could find out not only how many receptors there are in a biopsy, but also how active they are.

The technique uses two types of antibody, each attached to a fluorescent dye molecule. Each of the two types is selected to fuse with a different part of an EGFR molecule, but one will do so only when the receptor has become active.

Pointing a laser at the sample causes the first dye to become excited and emit energy. With an activated receptor, the second dye will be attached nearby and so will absorb some of the energy given off by the first. Measuring how much energy is transferred between the two dyes indicates the activity of the receptors.

Dr Parker's idea was implemented by his colleague Banafshe Larijani. She and her colleagues used FRET to measure the activity of receptors in 122 head-and-neck cancers. They found that the higher the activity of the receptors they examined, the more likely it was the cancers would return quickly following treatment. The technique was found to be a better prognostic tool than conventional visual analysis of receptor density.

To speed things up, engineers in the same group have now created an instrument that automates the analysis. Tumour biopsies are placed on a microscope slide and stained with antibodies. The system then points the laser at the samples, records images of the resulting energy transfer and interprets those images to provide FRET scores. Results are available in as little as an hour, compared with four or five days using standard methods.

Having established the principle with head-and-neck cancer, the team hopes to extend it. They are beginning a large-scale trial to see whether FRET can accurately "hindcast" the clinical outcomes associated with 2,000 breast-cancer biopsies. Moreover, if patterns of receptor-activation for other types of cancers can be characterised, the technique could be applied to all solid tumours (ie, cancers other than leukaemias and lymphomas).

If they succeed, it will be good news for researchers who want to switch from classifying cancers anatomically to classifying them biochemically. Most cancer specialists think that patients with tumours in different parts of the body that are triggered by the same genetic mutations may have more in common than those whose tumours are in the same organ, but have been caused by different mutations. The new approach could help make such classification routine. That could, in turn, create a new generation of therapies and help doctors decide which patients should receive them, and in which combinations and doses.

## Monitor

## The digital geographers

Sep 3rd 2009

From The Economist print edition

**The internet: Detailed digital maps of the world are in widespread use. They are compiled using both high-tech and low-tech methods**

IT IS a damp, overcast Monday morning in Watford, an undistinguished town north of London that seems to offer little to the casual visitor. But one man is eagerly snapping photographs. In fact, he is working with six high-resolution cameras, all of which are attached to the roof of the car in which he is being driven. He sits in the passenger seat with a keyboard on his lap, tapping occasionally and muttering into a microphone. A computer screen built into the dashboard shows the car's progress as a luminous dot travelling across a map of the town. The man is a geographic analyst for NAVTEQ, one of a small group of companies that are creating new, digital maps of the world.

Each keystroke he makes denotes a feature in the outside world that is added to the map displayed on the screen. New details are also recorded in audio form. Once the journey is finished, the analyst can also pick out new details while watching a video playback. All this information is transferred from a server in the car's boot to NAVTEQ's database.

Companies such as NAVTEQ and its rivals, which include Tele Atlas and Microsoft, always start a new map by going to trusted sources such as local governments or mapping organisations. This information can be corroborated using aerial or satellite photography. Only when these sources are exhausted do they switch to the more expensive process of gathering data themselves. The digital maps they create are used mostly by motorists in rich countries. But the same companies are now creating maps of the developing world, which is requiring them to do things in somewhat different ways.

A geographic analyst in India would probably have deserted his vehicle, finding it impractical to manoeuvre on the country's crowded urban streets. Instead, he would go on foot and use a pen to annotate a map printed on paper, a technique abandoned by his Western counterparts a decade ago. Official mapmaking in some poor countries is far from comprehensive, leaving the likes of NAVTEQ or Tele Atlas to generate the most accurate maps available.

The type of data that must be gathered also varies. Navigation in wealthy Western markets generally requires gathering the information that is of most interest to motorists. But lower levels of car ownership in poor countries makes such information less relevant. Instead, the proliferation of mobile phones in countries such as China or India, many of which incorporate satellite-positioning chips, may make pedestrian navigation more relevant for local customers. Mapmakers are more likely to spend time hanging around bus stations collecting timetables, or finding the quickest route, which is not always the most direct one, from a city's railway station to its main shopping street. All this information has to be constantly refreshed, sometimes several times a year.

To reduce the cost of sending staff on such reconnaissance trips, mapping companies are asking their customers to do more of the work. Tele Atlas, for example, gathers data from users of satellite-navigation systems made by TomTom, a firm based in the Netherlands. Drivers can report errors and suggest new features, or can agree to submit data passively: the TomTom device automatically logs their vehicle's position, leaving a trail where it has travelled. It is then possible to calculate the vehicle's direction and speed, which can help identify the class of road on which it is travelling. Altitude measurements mean the road's gradient can be determined. Other information can also be deduced. If a lot of cars all seem to be driving across what was thought to be a ploughed field, for example, then it is likely that a new road has been built. Such detective work keeps the company's mapping database up to date.

In some parts of the world, however, mapmaking relies heavily on voluntary contributions. Google's Map Maker service, for example, makes up for the lack of map data for much of the world by asking volunteers to provide it. Among its contributors is Tim Akinbo, a Nigerian software developer who got involved with

the project last year. He has mapped recognisable features in Lagos, where he lives, as well as his home town of Jos. Churches, banks, office buildings and cinemas all feature on his map.

His working method is relatively simple. His mobile phone does not have satellite positioning, but he can use it to call up Google Maps, see what is on the map in a particular area and make a note of things to add. He then goes online when he gets home to add new features.

Why should people freely give up their time to improve local maps? Mr Akinbo explains that local businesses could use Map Maker to alert potential customers to their existence. "They will be contributing to a tool from which other people can benefit, as well as themselves," he explains. With enough volunteers a useful map can be created without the need for fancy camera-toting cars.



## Monitor

## Washing without water

Sep 3rd 2009

From The Economist print edition

**Environment: A washing machine uses thousands of nylon beads, and just a cup of water, to provide a greener way to do the laundry**

SYNTHETIC fibres tend to make low quality clothing. But one of the properties that makes nylon a poor choice of fabric for a shirt, namely its ability to attract and retain dirt and stains, is being exploited by a company that has developed a new laundry system. Its machine uses no more than a cup of water to wash each load of fabrics and uses much less energy than conventional devices.

The system developed by Xeros, a spin-off from the University of Leeds, in England, uses thousands of tiny nylon beads each measuring a few millimetres across. These are placed inside the smaller of two concentric drums along with the dirty laundry, a squirt of detergent and a little water. As the drums rotate, the water wets the clothes and the detergent gets to work loosening the dirt. Then the nylon beads mop it up.

The crystalline structure of the beads endows the surface of each with an electrical charge that attracts dirt. When the beads are heated in humid conditions to the temperature at which they switch from a crystalline to an amorphous structure, the dirt is drawn into the core of the bead, where it remains locked in place.



Xeros

**Water? Who needs it?**

The inner drum, containing the clothes and the beads, has a small slot in it. At the end of the washing cycle, the outer drum is halted and the beads fall through the slot; some 99.95% of them are collected.

Because so little water is used and the warm beads help dry the laundry, less tumble drying is needed. An environmental consultancy commissioned by Xeros to test its system reckoned that its carbon footprint was 40% smaller than the most efficient existing systems for washing and drying laundry.

The first machines to be built by Xeros will be aimed at commercial cleaners and designed to take loads of up to 20 kilograms. Customers will still be able to use the same stain treatments, bleaches and fragrances that they use with traditional laundry systems. Nylon may be nasty to wear, but it scrubs up well inside a washing machine.

## Monitor

## Hard act to follow

Sep 3rd 2009

From The Economist print edition

**Environment: Making softwoods more durable could reduce the demand for unsustainably logged tropical hardwoods**

ONE of the reasons tropical forests are being cut down so rapidly is demand for the hardwoods, such as teak, that grow there. Hardwoods, as their name suggests, tend to be denser and more durable than softwoods. But unsustainable logging of hardwoods destroys not only forests but also local creatures and the future prospects of the people who lived there.

It would be better to use softwood, which grows in cooler climes in sustainably managed forests. Softwoods are fast-growing coniferous species that account for 80% of the world's timber. But the stuff is not durable enough to be used outdoors without being treated with toxic preservatives to protect it against fungi and insect pests. These chemicals eventually wash out into streams and rivers, and the wood must be retreated. Moreover, at the end of its life, wood that has been treated with preservatives in this way needs to be disposed of carefully.

One way out of this problem would be an environmentally friendly way of making softwood harder and more durable—something that a Norwegian company called Kebony has now achieved. It opened its first factory in January.



Kebony ASA

**Kebony's product is furfuryl**

Kebony stops wood from rotting by placing it in a vat containing a substance called furfuryl alcohol, which is made from the waste left over when sugarcane is processed. The vat is then pressurised, forcing the liquid into the wood. Next the wood is dried and heated to 110°C. The heat transforms the liquid into a resin, which makes the cell walls of the wood thicker and stronger.

The approach is similar to that of a firm based in the Netherlands called Titan Wood. Timber swells when it is damp and shrinks when it is dry because it contains groups of atoms called hydroxyl groups, which absorb and release water. Titan Wood has developed a technique for converting hydroxyl groups into acetyl groups (a different combination of atoms) by first drying the wood in a kiln and then treating it with a chemical called acetic anhydride. The result is a wood that retains its shape in the presence of water, and is no longer recognised as wood by grubs that would otherwise attack it. It is thus extremely durable.

The products made by both companies are completely recyclable, environmentally friendly and create woods that are actually harder than most tropical hardwoods. The strengthened softwoods can be used in everything from window frames to spas to garden furniture. Treated maple is also being adopted for decking on yachts. The cost is similar to that of teak, but the maple is more durable and easier to keep clean.

Obviously treating wood makes it more expensive. But because it does not need to receive further treatments—a shed made from treated wood would not need regular applications of creosote, for example—it should prove economical over its lifetime. Kebony reckons that its pine cladding, for example, would cost a third less than conventionally treated pine cladding over the course of 40 years. Saving money, then, need not be at the expense of helping save the planet.

## Monitor

## Memories are made of this

Sep 3rd 2009

From The Economist print edition

### Computing: Memory chips based on nanotubes and iron particles might be capable of storing data for a billion years

FEW human records survive for long, the 16,000-year-old Paleolithic cave paintings at Lascaux, France, being one exception. Now researchers led by Alex Zettl of the University of California, Berkeley, have devised a method that will, they reckon, let people store information electronically for a billion years.

Dr Zettl and his colleagues constructed their memory cell by taking a particle of iron just a few billionths of a metre (nanometres) across and placing it inside a hollow carbon nanotube. They attached electrodes to either end of the tube. By applying a current, they were able to shuttle the particle back and forth. This provides a mechanism to create the "1" and "0" required for digital representation: if the particle is at one end it counts as a "1", and at the other end it is a "0".

The next challenge was to read this electronic information. The researchers found that when electrons flowed through the tube, they scattered when they came close to the particle. The particle's position thus altered the nanotube's electrical resistance on a local scale. Although they were unable to discover exactly how this happens, they were able to use the effect to read the stored information.

What makes the technique so durable is that the particle's repeated movement does not damage the walls of the tube. That is not only because the lining of the tube is so hard; it is also because friction is almost negligible when working at such small scales.

Theoretical studies suggest that the system should retain information for a long time. To switch spontaneously from a "1" to a "0" would entail the particle moving some 200 nanometres along the tube using thermal energy. At room temperature, the odds of that happening are once in a billion years. In tests, the stored digital information was found to be remarkably stable. Yet the distance between the ends of the tube remains small enough to allow for speedy reading and writing of the memory cell when it is in use.

The next challenge will be to create an electronic memory that has millions of cells instead of just one. But if Dr Zettl succeeds in commercialising this technology, digital decay itself could become a thing of the past.

## Monitor

## Only humans allowed

Sep 3rd 2009

From The Economist print edition

**Computing: Can online puzzles that force internet users to prove that they really are human be kept secure from attackers?**

Illustration by Belle Mellor



ON THE internet, goes the old joke, nobody knows you're a dog. This is untrue, of course. There are many situations where internet users are required to prove that they are human—not because they might be dogs, but because they might be nefarious pieces of software trying to gain access to things. That is why, when you try to post a message on a blog, sign up with a new website or make a purchase online, you will often be asked to examine an image of mangled text and type the letters into a box. Because humans are much better at pattern recognition than software, these online puzzles—called CAPTCHAs—can help prevent spammers from using software to automate the creation of large numbers of bogus e-mail accounts, for example.

Unlike a user login, which proves a specific identity, CAPTCHAs merely show that “there’s really a human on the other end”, says Luis von Ahn, a computer scientist at Carnegie Mellon University and one of the people responsible for the ubiquity of these puzzles. Together with Manuel Blum, Nicholas J. Hopper and John Langford, Dr von Ahn coined the term CAPTCHA (which stands for “completely automated public Turing test to tell computers and humans apart”) in a paper published in 2000.

But how secure are CAPTCHAs? Spammers stepped up their efforts to automate the solving of CAPTCHAs last year, and in recent months a series of cracks have prompted both Microsoft and Google to tweak the CAPTCHA systems that protect their web-based mail services. “We modify our CAPTCHAs when we detect new abuse trends,” says Macduff Hughes, engineering director at Google. Jeff Yan, a computer scientist at Newcastle University, is one of many researchers interested in cracking CAPTCHAs. Since the bad guys are already doing it, he told a spam-fighting conference in Amsterdam in June, the good guys should do it too, in order to develop more secure designs.

That CAPTCHAs work at all illuminates a failing in artificial-intelligence research, says Henry Baird, a computer scientist at Lehigh University in Pennsylvania and an expert in the design of text-recognition systems. Reading mangled text is an everyday skill for most people, yet machines still find it difficult.

The human ability to recognise text as it becomes more and more distorted is remarkably resilient, says Gordon Legge at the University of Minnesota. He is a researcher in the field of psychophysics—the study of the perception of stimuli. But there is a limit. Just try reading small text in poor light, or flicking through an early issue of *Wired*. “You hit a point quite close to your acuity limit and suddenly your performance crashes,” says Dr Legge. This means designers of CAPTCHAs cannot simply increase the amount of distortion to foil attackers. Instead they must mangle text in new ways when attackers figure out how to cope with existing distortions.

Mr Hughes, along with many others in the field, thinks the lifespan of text-based CAPTCHAs is limited. Dr von Ahn thinks it will be possible for software to break text CAPTCHAs most of the time within five years. A new way to verify that internet users are indeed human will then be needed. But if CAPTCHAs are broken it might not be a bad thing, because it would signal a breakthrough in machine vision that would, for example, make automated book-scanners far more accurate.

## **CAPTCHA me if you can**

Looking at things the other way around, a CAPTCHA system based on words that machines cannot read ought to be uncrackable. And that does indeed seem to be the case for ReCAPTCHA, a system launched by Dr von Ahn and his colleagues two years ago. It derives its source materials from the scanning in of old books and newspapers, many of them from the 19th century. The scanners regularly encounter difficult words (those for which two different character-recognition algorithms produce different transliterations). Such words are used to generate a CAPTCHA by combining them with a known word, skewing the image and adding extra lines to make the words harder to read. The image is then presented as a CAPTCHA in the usual way.

If the known word is entered correctly, the unknown word is also assumed to have been typed in correctly, and access is granted. Each unknown word is presented as a CAPTCHA several times, to different users, to ensure that it has been read correctly. As a result, people solving CAPTCHA puzzles help with the digitisation of books and newspapers.

Even better, the system has proved to be far better at resisting attacks than other types of CAPTCHA. "ReCAPTCHA is virtually immune by design, since it selects words that have resisted the best text-recognition algorithms available," says John Douceur, a member of a team at Microsoft that has built a CAPTCHA-like system called Asirra. The ReCAPTCHA team has a member whose sole job is to break the system, says Dr von Ahn, and so far he has been unsuccessful. Whenever the in-house attacker appears to be making progress, the team responds by adding new distortions to the puzzles.

Even so, researchers are already looking beyond text-based CAPTCHAs. Dr von Ahn's team has devised two image-based schemes, called SQUIGL-PIX and ESP-PIX, which rely on the human ability to recognise particular elements of images. Microsoft's Asirra system presents users with images of several dogs and cats and asks them to identify just the dogs or cats. Google has a scheme in which the user must rotate an image of an object (a teapot, say) to make it the right way up. This is easy for a human, but not for a computer.

The biggest flaw with all CAPTCHA systems is that they are, by definition, susceptible to attack by humans who are paid to solve them. Teams of people based in developing countries can be hired online for \$3 per 1,000 CAPTCHAs solved. Several forums exist both to offer such services and parcel out jobs. But not all attackers are willing to pay even this small sum; whether it is worth doing so depends on how much revenue their activities bring in. "If the benefit a spammer is getting from obtaining an e-mail account is less than \$3 per 1,000, then CAPTCHA is doing a perfect job," says Dr von Ahn.



## Rational consumer

## The road ahead

Sep 3rd 2009

From The Economist print edition

**Consumer electronics: Your next satellite-navigation device will be less bossy and more understanding of your driving preferences**

DO YOU get a quiet sense of satisfaction in deviating from the route recommended by your satellite-navigation device and ignoring its bossy voice as it demands that you “make a U-turn” or “turn around when possible”? A satnav’s encyclopedic knowledge of the road network may justify its hectoring tone most of the time, but sometimes you really do know better. The motorway might look like the fastest way but it can be a nightmare at this time of the day; taking a country lane or a nifty shortcut can avoid a nasty turn into heavy traffic; or sometimes the chosen route is simply too boring.

Fortunately your next satnav will be more understanding, because it will allow a greater level of personalisation. It may well, for example, try to learn your motoring foibles, such as your favourite route into town. This is just one of the features being readied for inclusion in the next generation of devices. If you want them to, they will help you drive more economically by offering the route that requires the least fuel, or provide tips on how to adjust your driving style to be more frugal. Access to real-time traffic information will also become more widespread.

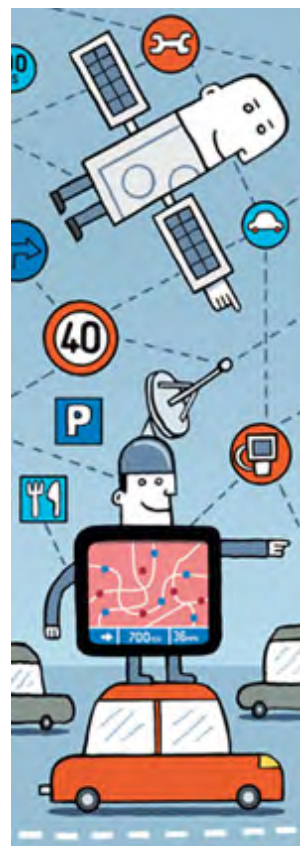
Avoiding hold-ups is the most effective way a satnav can help a driver save both time and fuel, and devices are getting better at doing this. By taking data from special FM radio signals or via a built-in cellular-data connection, satnavs can take account of current traffic conditions into route calculations. The actual traffic data can come from a variety of sources including traffic sensors, the anonymous monitoring of mobile phones moving along stretches of road and information collected (also anonymously) from satnavs in other vehicles. Access to real-time data will generally mean paying for a subscription, but it turns a navigation device into a live information system. This makes it useful not just when you do not know where you are going but also on familiar journeys, when you want to know which of several possible routes you should take.

The classic motorway dilemma provides an example. An overhead sign gives warning of an accident ahead. You could turn off now but you might then get stuck in a busy town because so many other drivers are following the same alternative route. Or you could stay on the motorway in the hope that the tailback will soon clear—only to find that it has got worse. A satnav that knows the average speeds on particular roads at different times of the day, as many now do, does a good job of predicting which route is the fastest under normal circumstances. But one that can also use real-time data would be able to tell that the traffic on the alternative route, say, is moving at a snail’s pace while vehicles near the site of the accident are beginning to pick up speed, suggesting that the emergency services have started clearing the road. So it could then advise you to stay on the motorway.

## Keep on going

Journey planning using a satnav usually allows for a limited choice: you can pick the fastest route, the shortest, the one that avoids motorways or a route that passes through or avoids a particular point. Future devices will learn about a driver’s preferences and adjust accordingly. MyDrive, for example, is a piece of software developed by Journey Dynamics, a British company, for satnav providers. It analyses the behaviour of an individual driver on different types of road. Some people always prefer motorways and

Illustration by Allan Sanders





drive quickly, others would much rather drive on local roads and some like to keep moving even if that means a long detour around a traffic jam. Understanding a driver's foibles can ensure that the right sort of route is chosen, and can also double the accuracy of the predicted time of arrival, says John Holland, the company's chief executive.

Satnavs with built-in data connections are also becoming more widespread, making other new things possible. TomTom, which is based in the Netherlands, lets users of its systems update maps and add points of interest. With two-way communication, satnavs no longer have to be taken out of the car and plugged into a computer to update their maps. "The screen becomes a connected computer in the car," says Mark Gretton, TomTom's chief technology officer. He expects other companies to develop software that can be downloaded by satnavs, just as small programs, or apps, can be added to mobile phones.

Another trend is towards greater integration between the satnav and the car's other systems. Bosch, a German car-component company, is working on a satnav that can give warning of a sharp bend ahead, for example. If the car is being driven too fast, it can prepare the brakes to slow the vehicle swiftly when the driver realises—or pretension the seat belts if he does not.

But such features are only possible with built-in satnav systems. These can be far more convenient than portable units, but they also tend to be much more expensive. Portable devices cost less and are easier to update, but they often get stolen from cars. The distinction may be starting to blur, however. Portable satnavs that plug into vehicle-information systems are starting to appear. And TomTom has done a deal that allows its devices to be specified as the built-in satnav in Renault cars.

All these innovations should give drivers more choice and flexibility. There is still plenty of scope, it seems, for satnavs to learn new tricks.

## Mobile augmented reality

### Reality, improved

Sep 3rd 2009

From The Economist print edition

**Computing: Thanks to mobile phones, augmented reality could be far more accessible—and useful—than virtual reality**



VIRTUAL reality never quite lived up to the hype. In the 1990s films such as “Lawnmower Man” and “The Matrix” depicted computer-generated worlds in which people could completely immerse themselves. In some respects this technology has become widespread: think of all those video-game consoles capable of depicting vivid, photorealistic environments, for example. What is missing, however, is a convincing sense of immersion. Virtual reality (VR) doesn’t feel like reality.

One way to address this is to use fancy peripherals—gloves, helmets and so forth—to make immersion in a virtual world seem more realistic. But there is another approach: that taken by VR’s sibling, augmented reality (AR). Rather than trying to create an entirely simulated environment, AR starts with reality itself and then augments it. “In augmented reality you are overlaying digital information on top of the real world,” says Jyri Huopaniemi, director of the Nokia Research Centre in Tampere, Finland. Using a display, such as the screen of a mobile phone, you see a live view of the world around you—but with digital annotations, graphics and other information superimposed upon it.

The data can be as simple as the names of the mountains visible from a high peak, or the names of the buildings visible on a city skyline. At a historical site, AR could superimpose images showing how buildings used to look. On a busy street, AR could help you choose a restaurant: wave your phone around and read the reviews that pop up. In essence, AR provides a way to blend the wealth of data available online with the physical world—or, as Dr Huopaniemi puts it, to build a bridge between the real and the virtual.

### AR, me hearties

It all sounds rather distant and futuristic. The idea of AR has, in fact, been around for a few years without making much progress. But the field has recently been energised by the ability to implement AR using advanced mobile handsets, rather than expensive, specialist equipment. Several AR applications are

already available. Wikitude, an AR travel-guide application developed for Google's Android G1 handset, has already been downloaded by 125,000 people. Layar is a general-purpose AR browser that also runs on Android-powered phones. Nearest Tube, an AR application for Apple's iPhone 3GS handset, can direct you in London to the nearest Underground station. Nokia's "mobile augmented reality applications" (MARA) software is being tested by staff at the world's largest handset-maker, with a public launch imminent.

What has made all this possible is the emergence of mobile phones equipped with satellite-positioning (GPS) functions, tilt sensors, cameras, fast internet connectivity and, crucially, a digital compass. This last item is vital, and until recently it was the one bit of hardware that was missing from the iPhone, says Philipp Breuss-Schneeweis of Mobilizy, the Austrian software house which developed Wikitude. (A compass is standard on the Android G1 handset.) But the launch of the compass-equipped iPhone 3GS handset in June is expected to trigger a deluge of AR apps.

The combination of GPS, tilt sensors and a compass enables a handset to determine where it is, its orientation relative to the ground, and which direction it is being pointed in. The camera allows it to see the world, and the wireless-internet link allows it to retrieve information relating to its surroundings, which is combined with the live view from the camera and displayed on the screen. All this is actually quite simple, says Mr Breuss-Schneeweis. In the case of Wikitude, the AR software works out the longitudes and latitudes of objects in the camera's field of view so that they can be tagged accordingly, he says.

Precisely which items in the real world are labelled varies from one AR application to another. Wikitude, as its name implies, draws information from Wikipedia, the online encyclopedia, by scouring it for entries that list a longitude and latitude—which includes everything from the Lincoln Memorial to the Louvre. Using the application a tourist can stroll through the streets of a city and view the names of the landmarks in the vicinity. The full Wikipedia entry on any landmark can then be summoned with a click. There are 600,000 Wikipedia entries that include longitude and latitude co-ordinates, says Mr Breuss-Schneeweis, and the number is increasing all the time.

Another way to identify nearby landmarks is to draw upon existing databases, such as those used in satellite navigation systems. That is how Nokia's MARA system works. It is doubly clever because harvesting local points of interest from the NAVTEQ software built into many Nokia phones means no wireless-internet connection is needed to look them up.

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**Information from  
social networks  
can be overlaid on  
the real world.**

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However it is done, the result of both approaches is to present detailed information about the user's surroundings. That said, the precision of the tagging can vary somewhat, because satellite-positioning technology is only accurate to within a few metres at best. This can cause problems when standing very close to a landmark. "The farther you are away from the buildings the more accurate it seems to be," says Mr Breuss-Schneeweis.

But there is a way to improve the accuracy of AR tagging at close quarters. Total Immersion, a firm based in Paris, is one of several companies using object recognition. By looking for a known object in the camera's field of view, and then analysing that object's position and orientation, it can seamlessly overlay graphics so that they appear in the appropriate position relative to the object in question.

Together with Alcatel-Lucent, a telecoms-equipment firm, Total Immersion is developing a mobile-phone service that allows users to point their phone's camera at an object, such as the Mona Lisa. The software recognises the object and automatically retrieves related information, such as a video about Leonardo da Vinci. The same approach will also allow advertisements in newspapers and on billboards to be augmented, too. Point your camera at a poster of a car, for example, and you might see a 3-D rendering of the vehicle floating in space, which can be viewed from any angle by moving around.

## **Recognise this**

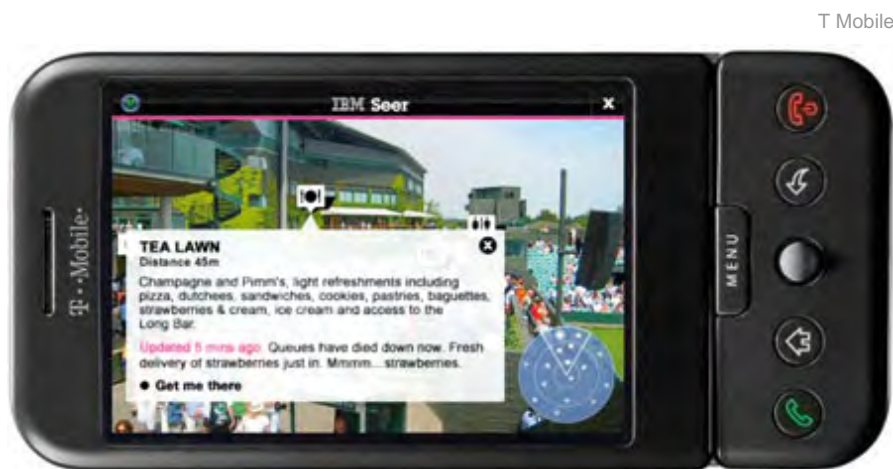
The simplest way to make all this work, says Greg Davis of Total Immersion, is to put 2-D bar-codes on posters and advertisements, which are detected and used to retrieve content which is then superimposed on the device's screen. But the trend is towards "markerless" tracking, where image recognition is used to identify targets. Putting a 2-D bar-code on the Mona Lisa, after all, is not an option.

Nokia's Point-and-Find software uses the markerless approach. It is a mobile-phone application, currently in development, that lets you point your phone at a film poster in order to call up local viewing times and book tickets. In theory this approach should also be able to recognise buildings and landmarks, such as

the Eiffel Tower, although recognising 3-D objects is much more difficult than identifying static 2-D images, says Mr Davis. The way forward may be to combine image-recognition with satellite-positioning, to narrow down the possibilities when trying to identify a nearby building. The advantage of the image-recognition approach, says Mr Davis, is that graphics can be overlaid on something no matter where it is, or how many times it gets moved.

One category of moving objects that should be easy to track is people, or at least those carrying mobile phones. Information from social networks, such as Facebook, can then be overlaid on the real world. Clearly there are privacy concerns, but Latitude, a social-networking feature of Google Maps, has tested the water by letting people share their locations with their friends, on an opt-in basis. The next step is to let people hold up their handsets to see the locations and statuses of their friends, says Dr Huopaniemi, who says Nokia is working on this very idea.

As well as being able to see what your friends are up to now, it can be useful to see into the past. Nokia has developed an AR system called Image Space which lets users record messages, photos and videos and tag them with both place and time. When someone else goes to a particular location, they can then scroll back through the messages that people have left in the vicinity. More practically, Wikitude can also link virtual messages to real places by overlaying user-generated reviews of bars, hotels and restaurants from a website called Qype onto the establishments in question.



**Time for some strawberries, then**

Other obvious uses for AR are turn-by-turn navigation, in which the route to a particular destination is painted onto the world; house-hunting, using AR to indicate which houses are for sale in a particular street; and providing additional information at sporting events, such as biographies of individual players and on-the-spot instant replays. Some of those attending this year's Wimbledon tennis tournament got a taste of things to come with a special version of Wikitude, called Seer, developed for the Android G1 handset in conjunction with IBM and Ogilvy, an advertising agency. It could direct users to courts, restaurants and loos, provide live updates from matches, and even show if there was a queue in the bar or at the taxi rank.

These sorts of application really are just the beginning, says Dr Huopaniemi. Virtual reality never really died, he says—it just divided itself in two, with AR enhancing the real world by overlaying information from the virtual realm, and VR becoming what he calls “augmented virtuality”, in which real information is overlaid onto virtual worlds, such as players' names in video games. AR may be a relatively recent arrival, but its potential is huge, he suggests. “It's a very natural way of exploring what's around you.” But trying to imagine how it will be used is like trying to forecast the future of the web in 1994. The building-blocks of the technology have arrived and are starting to become more widely available. Now it is up to programmers and users to decide how to use them.

## Unmanned military aircraft

## Attack of the drones

Sep 3rd 2009

From The Economist print edition

**Military technology: Smaller and smarter unmanned aircraft are transforming spying and redefining the idea of air power**

Reuters



FIVE years ago, in the mountainous Afghan province of Baghlan, NATO officials mounted a show of force for the local governor, Faqir Mamozai, to emphasise their commitment to the region. As the governor and his officials looked on, Jan van Hoof, a Dutch commander, called in a group of F-16 fighter jets, which swooped over the city of Baghlan, their thunderous afterburners engaged. This display of air power was, says Mr van Hoof, an effective way to garner the respect of the local people. But fighter jets are a limited and expensive resource. And in conflicts like that in Afghanistan, they are no longer the most widespread form of air power. The nature of air power, and the notion of air superiority, have been transformed in the past few years by the rise of remote-controlled drone aircraft, known in military jargon as “unmanned aerial vehicles” (UAVs).

Drones are much less expensive to operate than manned warplanes. The cost per flight-hour of Israel’s drone fleet, for example, is less than 5% the cost of its fighter jets, says Antan Israeli, the commander of an Israeli drone squadron. In the past two years the Israeli Defence Forces’ fleet of UAVs has tripled in size. Mr Israeli says that “almost all” IDF ground operations now have drone support.

Of course, small and comparatively slow UAVs are no match for fighter jets when it comes to inspiring awe with roaring flyovers—or shooting down enemy warplanes. Some drones, such as America’s Predator and Reaper, carry missiles or bombs, though most do not. (Countries with “hunter-killer” drones include America, Britain and Israel.) But drones have other strengths that can be just as valuable. In particular, they are unparalleled spies. Operating discreetly, they can intercept radio and mobile-phone communications, and gather intelligence using video, radar, thermal-imaging and other sensors. The data they gather can then be sent instantly via wireless and satellite links to an operations room halfway



around the world—or to the hand-held devices of soldiers below. In military jargon, troops without UAV support are “disadvantaged”.

The technology has been adopted at extraordinary speed. In 2003, the year the American-led coalition defeated Saddam Hussein’s armed forces, America’s military logged a total of roughly 35,000 UAV flight-hours in Iraq and Afghanistan. Last year the tally reached 800,000 hours. And even that figure is an underestimate, because it does not include the flights of small drones, which have proliferated rapidly in recent years. (America alone is thought to have over 5,000 of them.) These robots, typically launched by foot soldiers with a catapult, slingshot or hand toss, far outnumber their larger kin, which are the size of piloted aeroplanes.

Global sales of UAVs this year are expected to increase by more than 10% over last year to exceed \$4.7 billion, according to Visiongain, a market-research firm based in London. It estimates that America will spend about 60% of the total. For its part, America’s Department of Defence says it will spend more than \$22 billion to develop, buy and operate drones between 2007 and 2013. Following the United States, Israel ranks second in the development and possession of drones, according to those in the industry. The European leaders, trailing Israel, are roughly matched: Britain, France, Germany and Italy. Russia and Spain are not far behind, and nor, say some experts, is China. (But the head of an American navy research-laboratory in Europe says this is an underestimate cultivated by secretive Beijing, and that China’s drone fleet is actually much larger.)

In total, more than three dozen countries operate UAVs, including Belarus, Colombia, Sri Lanka and Georgia. Some analysts say Georgian armed forces, equipped with Israeli drones, outperformed Russia in aerial intelligence during their brief war in August 2008. (Russia also buys Israeli drones.)

Iran builds drones, one of which was shot down over Iraq by American forces in February. The model in question can reportedly collect ground intelligence from an altitude of 4,000 metres as far as 140km from its base. This year Iranian officials said they had developed a new drone with a range of more than 1,900km. Iran has supplied Hizbullah militants in Lebanon with a small fleet of drones, though their usefulness is limited: Hizbullah uses lobbed rather than guided rockets, and it is unlikely to muster a ground attack that would benefit from drone intelligence. But ownership of UAVs enhances Hizbullah’s prestige in the eyes of its supporters, says Amal Ghorayeb, a Beirut academic who is an expert on the group.

## Eyes wide open

How effective are UAVs? In Iraq, the significant drop in American casualties over the past year and a half is partly attributable to the “persistent stare” of drone operators hunting for insurgents’ roadside bombs and remotely fired rockets, says Christopher Oliver, a colonel in the American army who was stationed in Baghdad until recently. “We stepped it up,” he says, adding that drone missions will continue to increase, in part to compensate for the withdrawal of troops. In Afghanistan and Iraq, almost all big convoys of Western equipment or personnel are preceded by a scout drone, according to Mike Kulinski of Enerdyne Technologies, a developer of military-communications software based in California. Such drones can stream video back to drivers and transmit electromagnetic jamming signals that disable the electronic triggers of some roadside bombs.

In military parlance, drones do work that would be “dull, dirty and dangerous” for soldiers. Some of them can loiter in the air for long periods. The Eagle-1, for example, developed by Israel Aerospace Industries and EADS, Europe’s aviation giant, can stay aloft for more than 50 hours at a time. (France deployed several of these aircraft this year in Afghanistan.) Such long flights help operators, assisted with object-recognition software, to determine normal (and suspicious) patterns of movement for people and vehicles by tracking suspects for two wake-and-sleep cycles.

Drones are acquiring new abilities. New sensors that are now entering service can make out the “electrical signature” of ground vehicles by picking up signals produced by engine spark-plugs, alternators, and other electronics. A Pakistani UAV called the Tornado, made in Karachi by a company called Integrated Dynamics, emits radar signals that mimic a fighter jet to fool enemies.

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**In Afghanistan and Iraq, almost all big convoys are preceded by a scout drone.**

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UAVs are hard to shoot down. Today’s heat-seeking shoulder-launched missiles do not work above 3,000 metres or so, though the next generation will be able to go higher, says Carlo Siardi of Selex Galileo, a subsidiary of Finmeccanica in Ronchi dei Legionari, Italy. Moreover, drone engines are smaller—and therefore cooler—than those powering heavier, manned aircraft. In some of



them the propeller is situated behind the exhaust source to disperse hot air, reducing the heat signature. And soldiers who shoot at aircraft risk revealing their position.

But drones do have an Achilles' heel. If a UAV loses the data connection to its operator—by flying out of range, for example—it may well crash. Engineers have failed to solve this problem, says Dan Isaac, a drone expert at Spain's Centre for the Development of Industrial Technology, a government research agency in Madrid. The solution, he and others say, is to build systems which enable an operator to reconnect with a lost drone by transmitting data via a "bridge" aircraft nearby.

Getty Images



**Eyes in the sky, pilots on the ground**

In late June America's Northrop Grumman unveiled the first of a new generation of its Global Hawk aircraft, thought to be the world's fastest drone. It can gather data on objects reportedly as small as a shoebox, through clouds, day or night, for 32 hours from 18,000 metres—almost twice the cruising altitude of passenger jets. After North Korea detonated a test nuclear device in May, America said it would begin replacing its manned U-2 spy planes in South Korea with Global Hawks, which are roughly the size of a corporate jet.

Big drones are, however, hugely expensive. With their elaborate sensors, some cost as much as \$60m apiece. Fewer than 30 Global Hawks have been bought. And it is not just the hardware that is costly: each Global Hawk requires a support team of 20-30 people. As the biggest UAVs get bigger, they are also becoming more expensive. Future American UAVs may cost a third as much as the F-35 fighter jet (each of which costs around \$83m, without weapons). The Neuron, a jet-engine stealth drone developed by France's Dassault Aviation and partners including Italy's Alenia, will be about the size of the French manned Mirage fighter.

Small drones, by contrast, cost just tens of thousands of dollars. With electric motors, they are quiet enough for low-altitude spying. But batteries and fuel cells have only recently become light enough to open up a large market. A fuel cell developed by AMI Adaptive Materials, based in Ann Arbor, Michigan, exemplifies the progress made. Three years ago AMI sold a 25-watt fuel cell weighing two kilograms. Today its fuel cell is 25% lighter and provides eight times as much power. This won AMI a \$500,000 prize from the Department of Defence. Its fuel cells, costing about \$12,000 each, now propel small drones.

Most small drones are launched without airstrips and are controlled in the field using a small computer. They can be recovered with nets, parachutes, vertically strung cords that snag a wingtip hook or a simple drop on the ground after a stall a metre or two in the air. Their airframes break apart to absorb the impact; users simply snap them back together.

With some systems, a ground unit can launch a drone for a quick bird's-eye look around with very little effort. Working with financing from Italy's defence ministry, Oto Melara, an Italian firm, has built prototypes of a short-range drone launched from a vehicle-mounted pneumatic cannon. The aircraft's wings unfold upon leaving the tube. It streams back video while flying any number of preset round-trip patterns. Crucially, operators do not need to worry about fiddling with controls; the drone flies itself.

## **Send in the drones**

Indeed, as UAVs become more technologically complex, there is also a clear trend towards making their control systems easier to use, according to a succession of experts speaking at a conference in La Spezia, Italy, held in April by the Association for Unmanned Vehicle Systems International (AUVSI), an industry association. For example, instead of manoeuvring aircraft, operators typically touch (or click on) electronic maps to specify points along a desired route. Software determines the best flight altitudes, speeds and search patterns for each mission—say, locating a well near a hilltop within sniping range of a road.

Eyevine



**This is most certainly not a computer game**

Next year Lockheed Martin, an American defence contractor, begins final testing of software to make flying drones easier for troops with little training. Called ECCHO, it allows soldiers to control aircraft and view the resulting intelligence on a standard hand-held device such as an iPhone, BlackBerry or Palm Pre. It incorporates Google Earth mapping software, largely for the same reason: most recruits are already proficient users.

What's next? A diplomat from Djibouti, a country in the Horn of Africa, provides a clue. He says private companies in Europe are now offering to operate spy drones for his government, which has none. (Djibouti has declined.) But purchasing UAV services, instead of owning fleets, is becoming a "strong trend", says Kyle Snyder, head of surveillance technology at AUVSI. About 20 companies, he estimates, fly spy drones for clients.

One of them, a division of Boeing called Insitu, sees a lucrative untapped market in Afghanistan, where the intelligence needs of some smaller NATO countries are not being met by larger allies. (Armed forces are often reluctant to share their intelligence for tactical reasons.) Alejandro Pita, Insitu's head of sales, declines to name customers, but says his firm's flights cost roughly \$2,000 an hour for 300 or so hours a month. The drones-for-hire market is also expanding into non-military fields. Services include inspecting tall buildings, monitoring traffic and maintaining security at large facilities.

Drone sales and research budgets will continue to grow. Raytheon, an American company, has launched a drone from a submerged submarine. Mini helicopter drones for reconnaissance inside buildings are not far off. In China, which is likely to be a big market in the future, senior officials have recently talked of reducing troop numbers and spending more money developing "informationised warfare" capabilities, including unmanned aircraft.

AP



**X marks the spot**

There is a troubling side to all this. Operators can now safely manipulate battlefield weapons from control rooms half a world away, as if they are playing a video game. Drones also enable a government to avoid the political risk of putting combat boots on foreign soil. This makes it easier to start a war, says P.W. Singer, the American author of "Wired for War", a recent bestseller about robotic warfare. But like them or not, drones are here to stay. Armed forces that master them are not just securing their hold on air superiority—they are also dramatically increasing its value.



## Case history

## A factory on your desk

Sep 3rd 2009

From The Economist print edition

**Manufacturing: Producing solid objects, even quite complex ones, with 3-D printers is gradually becoming easier and cheaper. Might such devices some day become as widespread as document printers?**

Todd May



JUST before going on holiday you decide to buy a new pair of trainers. The usual procedure would be to pop down to the shops, select a style and try on a pair to make sure they are comfortable. Instead, imagine doing this: designing shoes exactly the right size in the style and colour you want on a computer, or downloading a design from the web and customising it. Then press print and go off to have lunch while a device on your desk manufactures them for you. On your return, your trainers are ready. But they are not quite right. So after another fiddle on the computer you print a second pair. Perfect.

The technology to print a pair of trainers, or at least to do so in one go rather than in parts that have to be glued together, is not yet available. But it is getting close. An increasing number of things, from mock-ups of new consumer products to jewellery and aerospace components, are being produced by machines that build objects layer by layer, just like printing in three dimensions. The general term the industry uses for this is “additive manufacturing”, but the most widely used devices are called 3-D printers. Some of these printers are becoming small enough to be desktop devices. They are making their way not just into workshops and factories, but also into the offices of designers, architects and researchers, and are being embraced by entrepreneurs who are using them to invent entirely new businesses.

The 3-D printers currently available use a variety of technologies, each of which is suited to different applications. They range in price from under \$10,000 to more than \$1m for a high-end device capable of making sophisticated production parts. Depending on the size of the object, the material it is made from and the level of detail required, the printing process takes around an hour for a relatively small, simple object that would fit into the palm of your hand, and up to a day for a bigger, more sophisticated part. The latest machines can produce objects to an accuracy of slightly less than 0.1mm.

Terry Wohlers, a consultant based in Colorado who monitors the industry, reckons the global market for additive manufacturing was worth \$1.2 billion in 2008 and that it could double in size by 2015. He estimates that 3-D printers of various sorts account for about 75% of sales, and high-performance



industrial machines the remainder. He expects lower-cost 3-D printers to account for as much as 90% of the market as prices fall and performance improves. Model-making and rapid prototyping remain the most popular uses, but all types of machines are increasingly being used for direct manufacturing of parts for finished products, rather than just prototypes.

Although powerful design software allows the virtual creation of 3-D objects on a computer screen, many designers and their clients prefer to examine, touch and hold a physical object before committing to huge investments in manufacturing or construction. Models help take some of the guesswork out of the process. They are traditionally crafted by hand from materials such as clay, wood or metal. It is a slow and costly business. Even making a non-working model of what might seem to be a relatively simple thing, like a new sole for a shoe, is in fact a complex process. It used to take Timberland, an American firm, a week to turn the design of a new sole into a model, at a cost of around \$1,200. Using a 3-D printer made by Z Corporation, based in Burlington, Massachusetts, it has cut the time to 90 minutes and the cost to \$35.

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**The ability of 3-D printers to speed up the design process will have a big impact on industry.**

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The ability of 3-D printers to speed up the design process will have a big impact on industry. "Now engineers can think of an idea, print it, hold it in their hand, share it with other people, change it and go back and print another one," says David Reis, the chief executive of Objet Geometries, an Israeli firm that makes 3-D printers. "Suddenly design becomes much more innovative and creative." Objet's machines can produce not only solid things out of plastic-type materials, but complex ones with moving parts too, such as a working model of a bicycle chain or a small gearbox. And they can print objects in multiple materials, such as a plastic remote-control unit with rubbery buttons.

## **Little by little**

The first step in all 3-D printing processes is for software to take cross-sections through the part to be created and calculate how each layer needs to be constructed. Different machines then take different approaches. Most processes can trace their roots back to the earliest form of 3-D printing: stereolithography. It was pioneered by 3D Systems, based in South Carolina, which made the first commercially available stereolithography machine in 1986.

Such machines build up objects, a layer at a time, by dispensing a thin layer of liquid resin and using an ultraviolet laser, under computer control, to make it harden in the required pattern of the cross-section. The build tray then descends, a new liquid surface is applied and the process is repeated. At the end, the excess soft resin is cleaned away using a chemical bath. A related approach, which also dates back to the 1980s, is selective laser-sintering, in which a high-temperature laser is used to melt and fuse together powdered ceramics, metal or glass, one layer at a time, to produce the desired 3-D shape.

Both Z Corporation and Objet, by contrast, use modified forms of inkjet printing. Z Corporation uses the printing heads in its machine to squirt a liquid binder onto a bed of white powder, but only in the areas where the layer needs to be solid. Colour is applied at the same time, allowing multicoloured objects to be created. The bed is lowered by a fraction of a millimetre and a new layer of powder is spread and rolled. The print head then repeats the process to create the next layer. When the process is complete and the material is set, the loose powder is blown away with an air jet to reveal the completed structure. The powder can be one of several substances including plastic, a special material that can be treated to become flexible like rubber, and casting materials suitable for making moulds. Each layer takes 15-30 seconds to output.

Objet's machines have print heads that slide back and forth depositing extremely thin layers of two types of liquid photopolymer. One type is printed where the cross-section is required to be solid, and the other where there are cavities, overhangs and other features with spaces. After each layer is

printed, an ultraviolet light-source in the print head hardens the polymer in the areas that need to be solid, and causes the second polymer to assume a gel-like state to provide structural support. The build tray then moves down and the process is repeated for the next layer. At the end, a jet of water washes away the gel-like support material. The machine is capable of making objects out of multiple kinds of solid photopolymer, each with different colours or properties.

Another form of 3-D printing is “fused deposition modelling”. Stratasys, based in Minneapolis, is the market leader in this field. This approach involves unwinding a filament of thermoplastic material from a spool and feeding it through a moving extrusion nozzle, heating the material to melt it and deposit it in the desired pattern on the build tray. The material then hardens to form the solid parts required in each layer. As subsequent layers are added the molten thermoplastic fuses to the layers below. In areas such as overhangs, physical supports can be added and removed later, or water-soluble materials can be deposited and then washed away.

Fred Fischer of Stratasys sees the market developing in two directions. On one hand there will be more demand for cheaper and simpler 3-D printers capable of quickly turning out concept models, which are likely to sit on the desks of engineers and designers. On the other hand there will also be demand for more elaborate machines with added features and higher performance, the most elaborate of which will provide a cost-effective way to manufacture thousands, and perhaps even tens of thousands, of components. Today’s rapid prototyping, in other words, will shade into tomorrow’s rapid manufacturing. Mr Fischer draws an analogy with the development of document printers, which range from small, cheap devices for home use to industrial printing presses capable of producing high-quality glossy magazines.

Today’s largest and most expensive 3-D printing machines, capable of directly producing complex plastic, and metal and alloy components using selective laser-sintering, are becoming increasingly popular in the consumer-electronics, aerospace and carmaking industries. It is not just their ability to make a small number of parts, without having to spread the massive tool-up costs of traditional manufacturing across thousands of items, that makes these machines useful. They can also be used to build things in different ways, such as producing the aerodynamic ducting on a jet-fighter as a single component, rather than assembling it from dozens of different components, each of which has to be machined and tested.

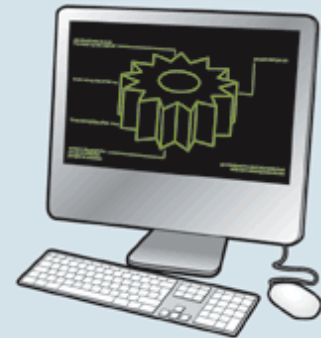
Some 3-D printers can already be found in the workshops of artists and enthusiasts. Jay Leno, an American television celebrity, bought a Stratasys machine to help keep his large collection of old cars on the road. He can scan a broken part that is no longer available into a computer, or design a missing one from scratch, and then print out a copy made of plastic. This can be fitted to a vehicle to check that the design is correct. After any adjustments, a final plastic copy can either be used by a machinist to make an exact copy from metal, or the model’s numerical data can be fed directly into a computer-controlled milling machine. Mr Leno’s 1907 White steam-driven car is now back on the road thanks to his 3-D printer.

## Where now?

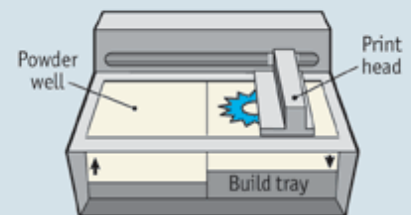
Many in the industry believe that low-cost 3-D printers for the consumer market will eventually appear.

### Object lesson

How a 3-D printer works



1. A model of the object is created on a computer. Software analyses this model, taking a series of cross-sections and working out the distribution of space and solid matter within each layer.



2. The 3-D printer builds up the object, one layer at a time, using one of several methods. A bed of powder may be laid down and then solidified in certain places by squirting a liquid binder onto it (above); lasers may be used to fuse together powdered ceramic, metal or glass in selected areas; plastic may be squirted out of a nozzle to build up material in the appropriate parts of each layer; or light may be used to harden selected regions of a photosensitive gel. Some devices can use more than one material for each layer, or apply inks to produce multicoloured objects.



3. Once each layer is complete, the build tray is lowered by a fraction of a millimetre and the construction of the next layer begins. When all the layers have been completed, any excess material is cleaned away to reveal the finished object.

Source: *The Economist*



3D Systems launched a new model costing less than \$10,000 in May. That may sound a lot, but it is what laser printers cost in the early 1980s, and they can now be had for less than \$100. Desktop Factory, a start-up based in Pasadena, California, hopes to launch a 3-D printer for \$4,995 that is around the same size as an early laser printer.

Objet believes the way to the mass market is via inkjet technology, just as it has been with 2-D printers. The ability to print different materials with inkjet heads greatly increases not just model-making abilities but production possibilities, too. The firm thinks it is getting close to being able to print with engineering-quality plastics through inkjet heads. "When we reach that point, it would allow us to go to short-term manufacturing," says Amit Shvartz, Objet's head of marketing.

Todd May



**One of Z Corporation's printers and (below) a finished model of a camcorder**

As with 2-D printing, many individuals and small firms may not need sophisticated machines, especially if they can use 3-D printing bureaus to produce their more demanding digital creations. Some of these make-to-order services are starting to appear. Z Corporation's machines are being used by companies to let players of video games, including "World of Warcraft", "Spore" and "Rock Band", produce colourful, 3-D models of their in-game characters, for example. "We are at that point where people are looking at this technology and saying 'We can make a business out of that'," says Scott Harmon, head of business development at Z Corporation.

Shapeways, a firm based in the Netherlands, lets users upload designs, choose a construction material and get a production quote. It then turns the design into an object with a 3-D printer and ships it to the customer. 3D Systems recently set up a joint venture called MQast, which is an online provider of aluminium and stainless-steel parts produced using its machines. And iKix, based in Chennai, India, has equipped itself with Z Corporation machines and set up a chain of online service-bureaus to produce architectural models, for delivery anywhere on earth.

Mr Wohlers thinks medical applications of 3-D printing also have a lot of potential. It is already possible to print 3-D models from the digital slices produced by computed-tomography scans. These can be used for training, to explain procedures to patients and to help surgeons plan complex operations. Some hospitals have started using 3-D printing to produce custom-made metallic and plastic parts to be used as artificial implants and in reconstructive surgery. "It is possible to deposit living cells through inkjet printers onto a biodegradable scaffold," adds Mr Wohlers. "There are a lot of problems to overcome, like the creation of blood vessels, but eventually I think we will see replacement body parts being printed too."

Meanwhile, what about making those trainers? A 3-D printer cheap enough to do that at home is probably many years away. But customising a standardised product by changing its outward appearance, like re-skinning a mobile phone, would be easier. "You can do that pretty much with existing technology," says Mr Harmon. You could also make other simple but useful things, like a missing piece for a broken toy. And you might even make your own 3-D printer. The RepRap project, an open-source group based at the University of Bath in England, has produced designs for a 3-D printer which can be built for around \$700, including royalty-free designs that can be fed into the machine to produce the plastic parts

Todd May

needed to create another RepRap machine. This could be fun for the mechanically minded. Others might want to wait until the local hardware store buys a 3-D printer and begins to offer one-off manufacturing services on demand.



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## Biohacking

## Hacking goes squishy

Sep 3rd 2009

From The Economist print edition

Illustration by Brett Ryder



**Biotechnology: The falling cost of equipment capable of manipulating DNA is opening up a new field of “biohacking” to enthusiasts**

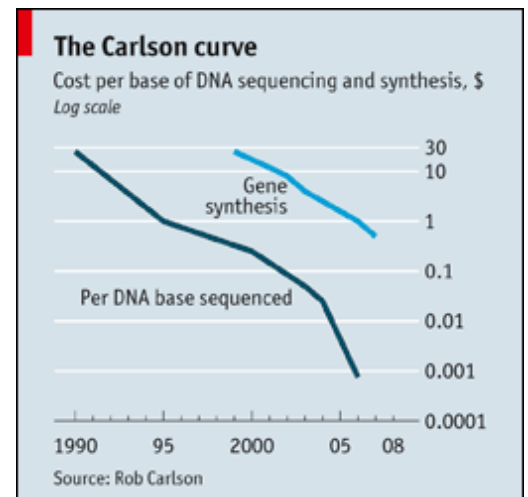
MANY of the world’s great innovators started out as hackers—people who like to tinker with technology—and some of the largest technology companies started in garages. Thomas Edison built General Electric on the foundation of an improved way to transmit messages down telegraph wires, which he cooked up himself. Hewlett-Packard was founded in a garage in California (now a national landmark), as was Google, many years later. And, in addition to computer hardware and software, garage hackers and home-build enthusiasts are now merrily cooking up electric cars, drone aircraft and rockets. But what about biology? Might biohacking—tinkering with the DNA of existing organisms to create new ones—lead to innovations of a biological nature?

The potential is certainly there. The cost of sequencing DNA has fallen from about \$1 per base pair in the mid-1990s to a tenth of a cent today, and the cost of synthesising the molecule has also fallen. Rob Carlson, the founder of a firm called Biodesic, started tracking the price of synthesis a decade ago. He found a

remarkably steady decline, from over \$10 per base pair to, lately, well under \$1 (see chart). This decline recalls Moore's law, which, when promulgated in 1965, predicted the exponential rise of computing power. Someday history may remember drops in the cost of DNA synthesis as Carlson's curve.

## A growing culture

And as the price falls, amateurs are wasting little time getting started. Several groups are already hard at work finding ways to duplicate at home the techniques used by government laboratories and large corporations. One place for them to learn about biohacking is DIYbio, a group that holds meetings in America and Britain and has about 800 people signed up for its newsletter. DIYbio plans to perform experiments such as sending out its members in different cities to swab public objects. The DNA thus collected could be used to make a map showing the spread of micro-organisms.



Strictly, that is not really biohacking. But attempts to construct micro-organisms that make biofuels efficiently certainly are—though it will be impressive if a group of amateurs can succeed in cracking a problem that is confounding many established companies. Amateur innovation, nevertheless, is happening. When a science blog called *io9* ran a competition for biohackers, it received entries for modified microorganisms that, among other things, help rice plants process nitrogen fertiliser more efficiently, measure the alcohol content of a person's breath and respond to commands from a computer.

The template for biohacking's future may be the International Genetically Engineered Machine (iGem) competition, held annually at the Massachusetts Institute of Technology. This challenges undergraduates to spend a summer building an organism from a "kit" provided by a gene bank called the Registry of Standard Biological Parts. Their work is possible because the kit is made up of standardised chunks of DNA called BioBricks.

As Jason Kelly, the co-founder of a gene-synthesis firm called Ginkgo BioWorks, observes, there is no equivalent of an electrical engineer's diagram to help unravel what is going on in a cell. As he puts it, "what the professionals can do in terms of engineering an organism is really rudimentary. It's really a tinkering art more than a predictable engineering system." BioBricks are, nevertheless, an attempt to provide the equivalent of electronic components with known properties to the field—and using them is part of Ginkgo's business plan. Information on BioBricks is kept public, helping the students understand which work together best.

What the students actually create, however, is left to their imaginations. And the results are often unexpected. A team from National Yang-Ming University in Taiwan conceived a bacterium that can do the work of a failed kidney; another, from Imperial College, London, worked on a "biofabricator" capable of building other biological materials.

Illustration by Brett Ryder

From relatively simple beginnings in 2003, iGem has grown to a competition involving 84 teams and 1,200 participants, most of whom leave with enough knowledge to do work at home. They are limited mainly by the novelty of the pursuit. Although there are no laws banning the sale of DNA, reagents or equipment, such items are usually priced for sale to large institutions. Indeed, it is this problem of finding ways to manage without expensive equipment, rather than a desire to work on "wetware", or living organisms, that motivates many biohackers.

Tito Jankowski, now a member of DIYbio, became interested in toolmaking for biohackers after taking part in iGem with a team from Brown University that had set itself the goal of modifying bacteria to detect lead in water. After graduating, Mr Jankowski was interested in doing more, but found his access to equipment restricted. He decided to create a cheaper version of the gel-electrophoresis box, a basic tool used in a wide range of experiments. Despite its simple construction, which can be as spare as a few panes of coloured plastic over a heating element, a gel box can sell for over \$1,000. But according to Mr Jankowski, "this equipment is only

expensive because it has never been used for personal stuff before.”

Mr Jankowski likens the current state of biohacking to the years in which amateurs first began working with personal computers, a metaphor that Dr Kelly also uses. Computers were once both expensive and arcane. Today, they are built mostly from off-the-shelf components, and even a relatively non-technical person can assemble one. If hobbyists like Mr Jankowski can help reduce the cost of equipment, say, tenfold, while BioBricks or something similar become cheaper and more predictable, then the stage will be set for a bioscience version of Apple or Google to be born in a dormitory room or garage.

## But what about viruses?

The computer metaphor, though, is a reminder that there is no shortage of fools and criminals ready to construct viruses and other harmful computer programs. If such people got interested in the biological world, the consequences might be even more serious—because in biology, there is no rebooting the machine.

More than any other detail of biohacking, this is the one that laymen grasp. And the resulting fear can have unpleasant effects, as Steve Kurtz, a professor of art at the State University of New York in Buffalo who works with biological material, found out. In May 2004 he awoke to find that his wife, Hope, was not breathing. The police who accompanied paramedics to his home found Petri dishes used in his art displays, and notified the Federal Bureau of Investigation (FBI), which brought in the Department of Homeland Security and charged him with bioterrorism. The authorities claimed the body of his wife, who had died of congenital heart failure, for examination. This took place over the protestations of Mr Kurtz, his colleagues and the local commissioner of public health, all of whom insisted that nothing in the exhibit could be harmful.

The initial reaction of the local police was hardly surprising. The motives of the FBI, which has experts capable of examining Mr Kurtz’s art scientifically, are harder to decode. After a grand jury refused to indict Mr Kurtz, the bureau then pursued him with a mail-fraud charge carrying a sentence of up to 20 years, which a judge dismissed this year. Mr Kurtz, known for his anti-establishment art, may simply have become the target of harassment for his views. But the FBI may genuinely be wary of biohackers; rumour suggests it has followed up the case by discreetly instructing reagent suppliers not to sell to individuals, despite the lack of any law against their doing so.

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**The right way to regulate biohacking may not become apparent for some time.**

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So far legislators have shown little interest in regulating individuals. When they choose to do so, it will not be easy. If groups such as DIYbio are successful, the basic tools of biohacking will be both cheap to buy and easy to construct at home. Many DNA sequences, including those for harmful diseases, are already widely published, and can hardly be retracted. The falling cost of DNA synthesis suggests that there will be automated “printers” for the molecule before long. There are some substances that can be controlled, like the reagents used to modify DNA. But a strict government policy regulating the chemical components of biohacking might have much the same effect as laws banning gun ownership—ordinary citizens will be discouraged, while criminals will still find what they want on black markets.

In all likelihood, the right way to regulate biohacking will not become apparent for some time. But some people think that any regulation at all could be harmful. Dr Carlson, who has a book on biohacking coming out later this year, is a proponent of light regulation at most. “If you look at our ability to respond to infectious diseases at this point in time, we’re essentially helpless,” he says. “The quandary we face is that we need the garage hackers, because that’s where innovation comes from.” Freeman Dyson, a venerable and polymathic physicist who has been thinking about the problem, is also a believer in biological innovation. He has written about a variety of futuristic possibilities, including modified trees that are better than natural ones at absorbing carbon dioxide, and termites that can eat old cars. If regulation of biohacking is too tight, such innovations—or, at least, things like them—might never come to pass.







## 3-D imaging

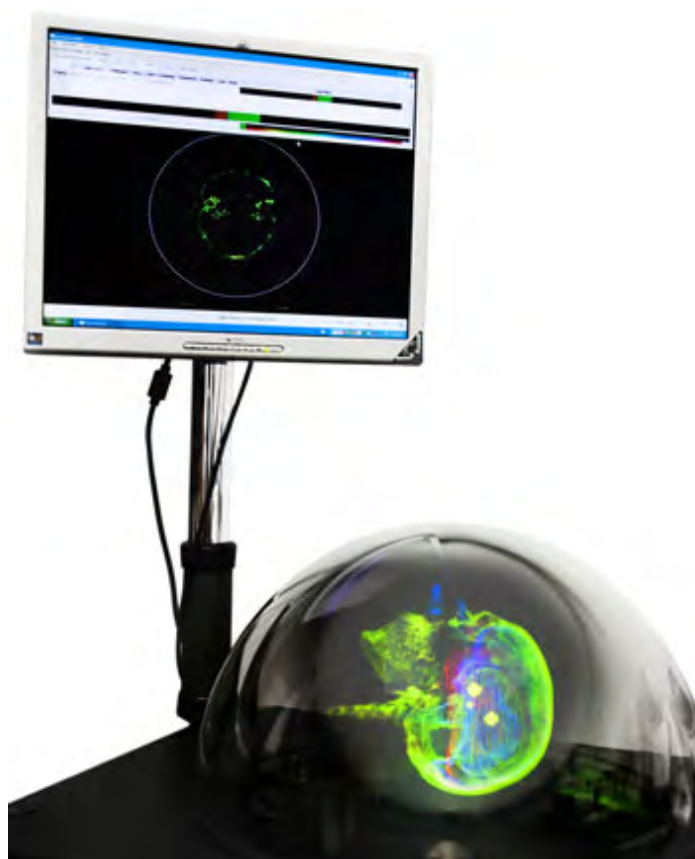
### 3-D: It's nearly there

Sep 3rd 2009

From The Economist print edition

**Three-dimensional imaging: New technologies that display 3-D visuals are on the verge of spreading from cinemas into the wider world**

Sara Forrest



BRIGHT and crisp high-definition (HD) images, a luxury not so long ago, are fast becoming standard in consumer electronics. HD technology is now well entrenched in the marketplace in the form of televisions, video cameras, Blu-ray players, games consoles and projectors. There seems little scope to improve the display of two-dimensional images, which provide about as much detail as the human eye can appreciate. So attention is shifting to the next frontier in display technology: three-dimensional (3-D) images.

In recent years 3-D cinema projection has made a dramatic comeback, shaking off its image as a gimmick and replacing the cheesy old red-and-blue glasses with new technologies that are easier to use and produce more lifelike results. Studios love 3-D because it is immune to piracy. Cinemas love 3-D because it allows them to offer something that even the most elaborate home cinema cannot match, and charge more for it. Now 3-D seems to be on the verge of moving out of the cinema and into a wider range of products.

### Would you look at that

Better and cheaper 3-D display technologies for home and office use are "ready for prime time", says a senior executive at Wistron, a Taiwanese firm that manufactures computers for many leading brands. By the end of this year the first mass-market laptops capable of displaying 3-D images will be on sale, he

says, and by the end of 2010 all of the world's top ten computer-makers will include 3-D displays in their product line-ups. At the Consumer Electronics Show held in Las Vegas in January, prototype 3-D televisions and other products were unveiled by JVC, LG, Panasonic, Samsung, Sony and others.

Such prototypes have been around for a few years, but they have recently made rapid progress, and the industry is now stumbling towards agreeing on the necessary standards. Even without such standards, several firms plan to launch 3-D products and services next year anyway. Beyond that, even more elaborate technologies are under development that use holograms to display 3-D images.

Creating images that appear to burst forth from a screen and invite you to reach out and touch them is not easy. One way of doing so is to use "stereoscopic" optical technologies, in which scenes are filmed from two angles. When displayed, special eyewear then ensures that one perspective is beamed exclusively to the right eye and the other to the left eye, fooling the brain into thinking that it is looking at a 3-D scene. So-called "autostereoscopic" 3-D systems do not require glasses. One approach uses tiny lenses on the front of the display to direct images for the left and right eyes in several different directions. Provided your head is in the right place, and you keep it still, a 3-D image appears.

But building a 3-D display is only one piece of the puzzle: there must also be 3-D content to show on it. A games console can be programmed to produce separate images for left and right eyes relatively easily, but most films and television programmes are not shot in 3-D. Now, however, it is possible to convert existing video into 3-D automatically. DDD Group, based in Santa Monica, California, makes a conversion chip, called TriDef, that uses object-recognition software to analyse colours and shapes and determine distances, inferring that, for example, the muzzle of a gun is closer to the viewer than the shooter's face. When the software is unsure it does not add depth, says Chris Yewdall, DDD's boss.

One of DDD's customers is Samsung, a South Korean electronics giant, which plans to launch 3-D television sets next year. DDD and its main competitors—JVC in Japan and NVIDIA in California—are also developing 3-D conversion technologies for computers. Acer, a Taiwanese manufacturer, is expected to launch a laptop equipped with a 3-D conversion chip made by DDD, in October. (Its display will require users to wear special glasses.)

An alternative approach to creating 3-D images is based on holography. A hologram is a special interference pattern created in a photosensitive medium (which can be as simple as a traditional photographic film). Light striking this pattern is scattered as though it were actually striking the object encoded by the interference pattern. The pattern is usually created by combining two laser beams, one of which has been bounced off the object being displayed.

Holograms have many advantages over stereoscopic images. Not only is no special eyewear needed, but also the images do not distort when observers move. But producing a fixed hologram of a static object is tricky enough; making a holographic display, or something that functions like one, is even more difficult. One approach involves firing carefully orchestrated pulses from an array of lasers at a sheet of glass scored with tiny grooves; another, demonstrated by researchers at the University of Southern California Graphics Lab, involves projecting high-speed video onto a rapidly spinning mirror, so that the appropriate views of an object are reflected in different directions. Such technology is still embryonic, but several industries are interested in it.

SeaReal



## Reach out and touch

Kolpi, a French company based in Sophia Antipolis, has devised a 3-D display that will allow oil-exploration companies to direct their remotely operated submarines. Video and sonar data from the submarine are displayed as a volleyball-sized hologram. An operator can direct the robot by moving a cursor around inside the hologram. The display is expected to cost \$140,000 when it goes on sale next year.

Actuality Medical, based in Bedford, Maryland, hopes to improve radiotherapy with a different type of 3-D display. At the moment doctors "hope the patient doesn't move" as they zap cancerous tissue with a beam of radiation, says Gregg Favalora, the firm's founder.

USC

Working with Philips, a Dutch electronics company, Actuality Medical has built an early version of a system that could limit damage to healthy tissue. Called Perspecta, it graphically depicts a simulated beam of radiation shooting through a hologram-like image of body tissue. This could eventually help doctors redirect radiation as body parts move slightly during treatment. The 3-D image is created by projecting about 6,000 images a second onto a nearly transparent spinning disc some 25 centimetres (10 inches) across, which forms a basketball-sized sphere.

Creating actual holograms—or images that resemble them, as Perspecta does—requires enormous amounts of processing power. So far this has kept images small: they are rarely bigger than a shoebox. To make them larger a company called SeeReal, based in Luxembourg, has built systems that use two eye-tracking cameras above a large 3-D display to follow the viewer's eyes. It is then necessary to generate only the parts of the hologram that are relevant to the viewer's position and direction of gaze, greatly reducing the amount of processing required.

SeeReal reckons that the information needed to construct small holograms can be carried over existing telecoms networks. That would allow scientists working in different locations to examine the same object, for example. Drugs companies, which are keen to improve co-operation between researchers in different laboratories, could represent a lucrative market for the technology within two years, SeeReal predicts.

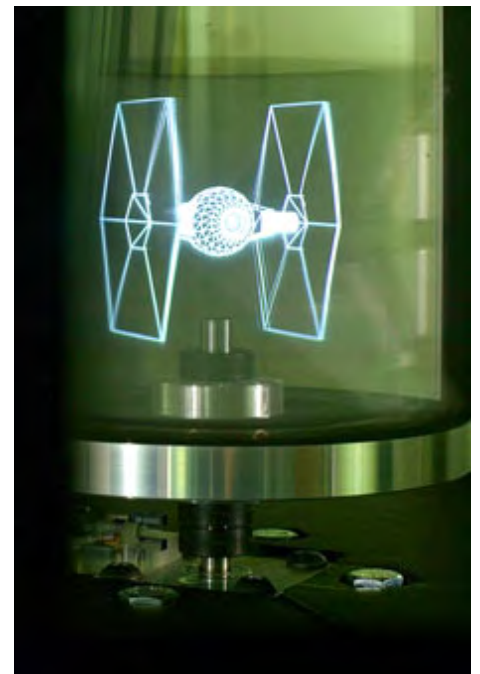
Another obvious use for 3-D displays is videoconferencing. Accenture, a consultancy and research firm, has equipped two non-adjacent rooms at its research centre in Sophia Antipolis, France, with cameras so that a wall-mounted screen in each one serves as a window into the other. It is now using 3-D displays to allow people to “share” objects and data between the two rooms. The result, says head researcher Kelly Dempski, is an “extension” of each room into the other. As hologram and data-transmission technologies improve over the next decade, the rooms will increasingly meld together, he says.

## Room with a view

Holografika, a company based in Budapest, hopes to realise this vision even sooner. One of its products, HoloVizio, displays 3-D images that “practically surround” users, says Peter Kovacs, the firm's software chief. Its customers include carmakers and oil-exploration companies. Working with 13 companies and research institutions in America, Europe and Japan, Holografika is developing a system that will use holographic laser arrays, driven by data from about 100 video cameras, to replicate the contents of one room in another. It is expected to cost about \$500,000.

Another 3-D extension of videoconferencing is the Eyeliner holographic projection system devised by Musion, a company based in London. It does not actually use holograms, but projects high-definition video onto nearly transparent screens made of very thin foil, in a modern updating of the old “Pepper's ghost” stage illusion. The effect, for viewers a few metres away, is a lifelike, full-sized 3-D moving image of a person that appears to float in space, without any visible screen.

Musion's technology has been used by Al Gore, Bill Gates, Prince Charles and many other celebrities to appear on stage at conferences without being physically present. From televisions and laptop screens to operating theatres and conference halls, 3-D in all its forms is suddenly being taken much more seriously than it was just a few years ago.



**Almost close enough to touch: 3-D displays from Actuality Medical (top of article), SeeReal (second image) and the University of Southern California Graphics Lab (above)**

## Brain scan

### Paranoid survivor

Sep 3rd 2009

From The Economist print edition

**Andrew Grove, the former boss of Intel, believes other fields can learn from the chipmaking industry that he helped bring into being**

EARLIER this year Andrew Grove taught a class at Stanford Business School. As a living legend in Silicon Valley and a former boss of Intel, the world's leading chipmaker, Dr Grove could have simply used the opportunity to blow his own trumpet. Instead he started by displaying a headline from the *Wall Street Journal* heralding the recent takeover of General Motors by the American government as the start of "a new era". He gave a potted history of his own industry's spectacular rise, pointing out that plenty of venerable firms—with names like Digital, Wang and IBM—were nearly or completely wiped out along the way.

Then, to put a sting in his Schumpeterian tale, he displayed a fabricated headline from that same newspaper, this one supposedly drawn from a couple of decades ago: "Presidential Action Saves Computer Industry". A fake article beneath it describes government intervention to prop up the ailing mainframe industry. It sounds ridiculous, of course. Computer firms come and go all the time, such is the pace of innovation in the industry. Yet for some reason this healthy attitude towards creative destruction is not shared by other industries. This is just one of the ways in which Dr Grove believes that his business can teach other industries a thing or two. He thinks fields such as energy and health care could be transformed if they were run more like the computer industry—and made greater use of its products.

Dr Grove may be 73 and coping with Parkinson's disease, but his wit is still barbed and his desire to provoke remains as strong as ever. Rather than slipping off to a gilded retirement of golf or gallivanting, as many other accomplished men of his age do, he is still spoiling for a fight.

His achievements mean that his provocations are worth paying attention to. He has arguably done as much as anyone to usher in the age of cheap, cheerful and ubiquitous personal computing. In part, he did this through technological prowess. He graduated at the top of his engineering class at New York's City College (one of the few options available to him as a poor Jewish refugee from Communist-controlled Hungary). He then went on to earn a doctorate at the University of California at Berkeley, and wrote a book on semiconductors that remains a standard text.

He joined Fairchild Semiconductor, once a pioneering electronics firm, where he caught the eye of Robert Noyce and Gordon Moore. The former was a co-inventor of the integrated circuit, while the latter coined Moore's law (which decrees, roughly, that the amount of computing power available at a given price doubles every 18 months). When the two left Fairchild to found Intel in 1968—initially to make memory chips, not microprocessors—they took the young Dr Grove with them. He eventually ended up in charge of the company, becoming chief executive in 1987. He continued in that role until 1998, when he became chairman, holding that post until 2004.

Though his scientific credentials are solid, he will probably be best remembered as a daring and successful businessman. Richard Tedlow, a historian at Harvard Business School, calls him "one of the master managers in the history of American business". One reason is market success: under his tenure, Intel came to dominate the microprocessor industry and its market capitalisation rocketed (making it, at one point, the world's most valuable company). A bigger reason, though, lies in how exactly he managed to steer Intel to such spectacular success.

Illustration by Andy Potts





## Intelligence inside

Two particularly risky decisions he took are revealing. In “Only the Paranoid Survive”, Dr Grove’s bestselling book, he argues that every company will face a confluence of internal and external forces, often unanticipated, that will conspire to make an existing business strategy unviable. In Intel’s case, such a “strategic inflection point” arose because its memory-chip business came under heavy assault from new Japanese rivals willing to undercut any price Intel offered.

What could he do? The firm’s roots and most of its profits lay in making memory chips; Intel’s microprocessor group was just a small niche. The firm’s two founders and much of its engineering staff were too emotionally wedded to its past successes to make a break. But Dr Grove decided to bet the future of the company on microprocessors, a move that saved his company and transformed the industry.

The second big decision was Dr Grove’s radical announcement that Intel would market its microchips directly to consumers. Previously, chipmakers had regarded computer-makers such as Dell and Compaq as their customers, and had not bothered with fancy advertising campaigns to end users. But Dr Grove believed that such a relationship allowed these assembly and marketing firms, which did little original research of their own, to capture too much of the value created by his firm’s innovation.

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**Dr Grove thinks pharmaceutical firms should study chipmakers to accelerate learning and innovation.**

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So he launched the “Intel Inside” campaign, which marketed microprocessor chips directly to consumers, starting in 1991. This incensed his rivals and his immediate customers, the computer-makers, but the strong demand for Intel’s new Pentium chip showed that the strategy had worked. True, the firm stumbled when a minor flaw was discovered in the Pentium that affected some mathematical calculations. Rather than rush to correct the problem, Intel tried to downplay it—a strategy that quickly turned into a public-relations disaster. The firm was forced to offer a replacement for all affected chips, at a cost of nearly half a billion dollars.

Painful though that was, Dr Grove now thinks this episode actually benefited the firm in two ways. First, it proved to internal sceptics that Intel really had become a consumer brand. Second, he reckons that it bolstered his efforts to improve the shoddy quality of manufacturing, to protect the firm from future fiascos. In hindsight, his risky decision to turn Intel from a component-maker into a consumer brand was a masterstroke.

## An American success story

Some observers have suggested that it was his family’s escape from the Nazis, and his own experience of the abuses of communism, that shaped Dr Grove’s strict management style. On this view, his demanding but meritocratic approach, rewarding ideas and knowledge over power, was a rejection of the injustices of communism.

Dr Grove, however, insists that it was his experience at City College, where talent and hard work were rewarded and where students challenged their professors without concern for rank, that impressed upon him the value of meritocracy. By contrast, he recalls an elitist, back-stabbing and lax corporate culture at Fairchild. Senior executives would stroll into the office or into meetings as late as they pleased, but blue-collar workers were penalised or even fired if they committed similar offences.

When he took control of Intel Dr Grove imposed a strict arrival time of 8am, with latecomers forced to sign a sheet. He also refused to go along with popular management trends such as flexi-time and teleworking. He was known as a blunt and demanding manager, but he also gained a reputation as a fair-minded boss who rewarded good ideas, no matter where they came from.

Asked today if he regrets imposing his disciplinarian personality on his company, he makes a confession: “You don’t understand—I was never that disciplined myself, and I’m not even a morning person!” He was determined to impose discipline on Intel, he says, for two reasons that ultimately worked to the firm’s advantage. First, he wanted to avoid the outrageous double standards he had experienced at Fairchild. The meritocratic culture he created at Intel then helped it attract the best talent in the industry. Second, he knew that strong discipline would also be necessary to improve his firm’s shoddy manufacturing.

At the time the microchip business was producing such unreliable products that customers insisted that

companies like Intel always license new products to a secondary supplier to ensure reliability of supply. His efforts to tighten up quality control led to a commercial coup. When his firm introduced its widely anticipated 386 processor, he stunned the industry by declaring that Intel would not license any secondary manufacturers. This was a huge risk for computer-makers, but such was their appetite for the new chip that they bought it anyway. Intel's ability to deliver good enough chips in large numbers meant profits no longer had to be shared with secondary manufacturers.

With his reputation for ruthlessness in the marketplace and rigorous discipline inside his firm, Dr Grove has much in common with another American business leader: Lee Raymond, the formidable former chairman of Exxon Mobil. Both men were feared by both rivals and many of their employees. Dr Grove once even spearheaded a sales campaign against a superior chip made by Motorola in an effort dubbed "Operation Crush". When asked about such bully-boy tactics, Dr Grove remains unrepentant. He even likes the comparison with the unloved oilman: "I never knew Lee Raymond, but he did take Exxon to the top of the Fortune 500—and that's OK with me."

Personal admiration aside, however, Dr Grove is convinced that Exxon and its Big Oil brethren are in a sunset industry. He has written and lectured widely on energy and environmental topics in recent years, arguing that oil and cars are heading for a divorce. He regards electricity as the most promising replacement fuel, and thinks battery technology has the potential to produce an Intel-like giant as the industry develops.

Another business he believes to be ripe for disruption is health care. He complains that the industry seems to innovate much too slowly. The lack of proper electronic medical records and smart "clinical decision systems" bothers him, as does the slow-moving, bureaucratic nature of clinical trials. He thinks pharmaceutical firms should study the fast "knowledge turns" achieved by chipmakers, so that the cycles of learning and innovation are accelerated. (A knowledge turn, a term coined by Dr Grove, is the time it takes for an experiment to proceed from hypothesis to results, and then to a new hypothesis—around 18 months in chipmaking, but 10-20 years in medicine.)

And what of chipmaking—is it, too, a sunset industry ripe for disruption? Dr Grove still believes in Moore's law (with the caveat that it will get ever pricier for chipmakers to uphold) but he has a grave concern. At a recent ceremony honouring his achievements, he shocked the gathered bigwigs by declaring that the industry's approach to hoarding patents was an abuse of intellectual-property rights and risked undermining its future. Asked to defend that claim, which upset even his own family members, he does not backtrack. He insists that firms must use their patents or lose them: "You can't just sit on your ass and give everyone the finger." Even though Dr Grove is no longer running Intel, it seems that his desire to shake things up is undimmed.



## Offer to readers

Sep 3rd 2009

From The Economist print edition

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## Business in Japan under the DPJ

## New bosses

Sep 3rd 2009 | TOKYO  
From The Economist print edition

The effect on business of the change of government in Japan is likely to be subtle but profound

EPA



AMONG Japan's many inventions in the 20th century was the "developmental state", an alliance between government and business to direct industry and set economic priorities. For most of the post-war period it was phenomenally successful, transforming the country into the world's second largest economy. So was the Liberal Democratic Party (LDP), which embraced this approach during over 50 years of almost uninterrupted sway. But in elections on August 30th the Democratic Party of Japan (DPJ) trounced the LDP. Given the active role that the state still plays in the economy, the change may be as sweeping for business as it is for politics.

The relations that big business nurtured with the LDP for decades now count for little. The 1,400 firms of Keidanren, a powerful business lobby, for example, donated around \$30m to the LDP in 2007 compared with less than \$1m to the DPJ (though Keidanren itself declined to endorse a party in the election).

The DPJ is eclectic, comprised of former LDP politicians, ex-bureaucrats, socialists, right-wingers and reformers. Although its leadership includes the scions of rich industrial families, unions constitute its political base. Yukio Hatoyama, who is poised to be named prime minister, has railed against "unrestrained market fundamentalism and financial capitalism".

The party campaigned against the economic reforms of Junichiro Koizumi, who as prime minister in 2001-06 revitalised Japanese business but is today blamed for a growing sense of economic insecurity. On the whole the party, like Japan itself, is conservative and averse to change. Yet it has pledged to overhaul economic policy in three areas that will have a big impact on the private sector: government spending, social safety nets and Japan's reliance on exports. These changes, it is hoped, will restore growth to the economy, which has stagnated since a stockmarket and property bubble burst in the early 1990s.

Start with spending. The new government plans to curtail big government construction projects, a hallmark of the LDP. Some of the money saved will go to subsidies for green technologies, such as a proposal to pay half the cost of installing solar-power systems in homes. The DPJ wants Japan to reduce its carbon emissions by 25% below 1990 levels by 2020 (the LDP had called for a 15% cut; Keidanren wants 4%). As a result heavy industry, and construction and cement firms in particular, are bracing for tough times, while green-tech firms like Sharp, Sanyo and Toshiba are preparing for a boom.

The DPJ wants to boost consumer spending by reducing taxes and fees. It plans to halve the petrol tax of

¥54 (\$0.58) a litre and gradually eliminate highway tolls, for example, in blatant contradiction of its green goals. This should boost carmakers and related firms, to the detriment of Japan's famed railways.

The DPJ is also determined to increase social spending. It says it will improve health care, expand payments for the unemployed and provide a minimum monthly pension of ¥70,000. To support families, it says it will give parents ¥26,000 a month for every child aged 15 and under, and remove the tuition fees for public high schools of around ¥120,000 a year.

These measures are all designed to give people more financial security, in the hope that this will induce them to spend more and thus boost the economy. If they succeed, firms that cater to domestic consumers, from clothing retailers to restaurants, are expected to prosper.

Some measures aim to boost business directly. The DPJ wants to reduce the tax rate for small firms from 18% to 11% (even though only one-third of them actually pay tax). But other policies are likely to hurt. It wants to increase the minimum wage to ¥1,000 per hour eventually from as little as ¥629 today. It also wants to reverse one of Mr Koizumi's reforms, allowing manufacturing firms to hire temporary employees, which it says adds to the sense of economic vulnerability, but which businesses say injects some flexibility into otherwise hopelessly rigid labour laws.

Businesses are worried, too, that the new government might tax them to pay for all this, given that the public debt is already nearly 200% of GDP. The DPJ says it will find the money by eliminating waste, but Keidanren, at least, thinks that will not be enough. It wants the government to raise the consumption tax from 5% to 10%—something the DPJ has pledged not to do for four years.

The traditional bias towards exporters is also in question. Carmakers and electronics firms in particular benefit from a weak yen, which keeps prices low for overseas customers. But it also hurts domestic producers and consumers. Financial types expect the yen to appreciate under the DPJ.

Of course, the DPJ may struggle to implement all of these plans, given its own ideological fissures and the entrenched power of Japan's bureaucracy. And it has no intention of undoing the protectionist red tape, particularly in services, that does the most to hold back Japan's economy. Yet the new government may nonetheless be paving the way for future reforms. Past Japanese governments were reluctant to embrace deregulation and the economic upheaval it would bring, in part because big companies provided all-important social safeguards (lifetime employment, generous pensions and the like). The DPJ, however, intends to create a state-funded safety net. That would remove one of the biggest obstacles to change.

This year the Japanese economy is forecast to contract by 3-6%. China will surpass it as the world's second-largest economy this year or next. That is expected to cause widespread hand-wringing, akin to America's "Sputnik moment," when the Soviet Union beat it to become the first country to launch a satellite. The DPJ has no grand strategy for restoring Japan to growth—and greatness—beyond funnelling money to consumers, and leaving them to do the hard work. That may be wise. Only developing countries need a developmental state, after all.

## The stigma of wealth in China

## Original sin

Sep 3rd 2009 | HONG KONG  
From The Economist print edition

## China debates whether its richest citizens earned their fortunes fairly

MOST Chinese assume it is something of a mixed blessing to appear in the annual rankings of China's wealthiest citizens published by *Forbes* magazine. Early this year a novel with the title "The curse of *Forbes*" was syndicated in a Chinese magazine before being published as a book. Anyone on the list, its protagonist warns, is "dead meat". The rankings are widely known as "pig-killing lists"—a reference to the fate the authorities are thought to have in mind for those who appear on them. In a review of the book, *Forbes* reflects on the fact that many people on its Chinese lists have indeed been detained or arrested, and asks whether "anyone in China is safe from the curse".

The answer, new research suggests, is yes. Rupert Hoogewerf, the author of *Forbes*'s first Chinese list, which appeared ten years ago, and now publisher of a competing version called the *Hurun Rich List*, looked at what has happened to the 1,300-odd people who have featured in it. Two await trial, ten are currently under investigation, seven have been investigated but not convicted, seven have fled China, and six have died (including two suicides and one murder). Eighteen have ended up in jail, which may sound like quite a toll, but amounts to less than 2% of the names on the list—not so outlandish a proportion, Mr Hoogewerf argues.

Nonetheless, many still wonder whether wealth in China is inextricably tied to crime and corruption, the "original sins" that are thought to have underpinned the rise of many of the country's most lucrative ventures. That question was the subject of a 20-page article published last week in *Kan Tian Xia* ("View the world"), a magazine based in Beijing, which cited Mr Hoogewerf's findings. Mr Hoogewerf himself points out that many of the crimes committed by China's tycoons date back to an earlier era, when credit was harder to obtain and corporate governance cruder (see table). New wealth, particularly in areas where venture capital plays a big part, such as technology, is subject to closer scrutiny these days. He maintains that the stigma associated with wealth in the past, sometimes deservedly, has lifted in recent years.

Original sinners			
Jailed <i>Hurun Rich List</i> members*			
Name	Highest ranking (year)	Charges	Sentence
Yang Bin	2 (2001)	Faking registered capital, illegal use of agricultural land, contract fraud, bribery, forgery of documents	18 years
Huang Hongsheng	6 (1999)	Conspiracy to steal, conspiracy to defraud and other crimes	6 years (released early on bail)
Wu Zhijian	9 (1999)	Contract fraud and forgery of documents	17 years (released early on medical grounds)
Luo Zhongfu	10 (1999)	Illegal use of agricultural land and unauthorised logging	10 years and 6 months
Zhou Zhengyi	11 (2002)	First sentence: faking registered capital, stock manipulation. Second sentence: bribery, tax-receipt forgery and embezzlement	First sentence: 3 years Second sentence: 16 years
Mou Qizhong	16 (1999)	Fraudulent use of letters of credit	Life (under appeal)
Gu Chujun	20 (2001)	Faking registered capital, non-disclosure of important information, embezzlement	10 years

Source: Hurun Report

\*Of those in top 20

But China's tycoons continue to get into trouble. Shortly before "The curse of *Forbes*" appeared, it emerged that Huang Guangyu (also known as Wong Kwong Yu), a retailing magnate who was first on *Hurun*'s list last year and second on *Forbes*'s, had disappeared. He was subsequently reported to have been detained in a wide-ranging bribery probe. In June the mayor of Shenzhen, a big city near Hong Kong, was detained in what was thought to be the same probe. On August 31st Hopson Development, a

property firm, revealed that for the past six months it had been unable to account for its own chairman, Chu Mang Yee (140th on the *Forbes* list, and tenth on *Hurun's*), although the link to the probe, if any, is unclear.

The majority of people who have posted comments on other websites about the *Kan Tian Xia* article seem suspicious of successful businessmen. Tellingly, the government's internet censors have let these comments proliferate, suggesting that it takes a similar view. One blogger argued that the vast majority of those on rich lists had escaped jail simply because they had bribed officials to stay out of it. "Even our children know you cannot succeed without dirtying your hands," another added. A third had an even grimmer view: "Remember that any enterprise that is big will, eventually, become the government's property." It is not always the tycoons who are the crooks.

**China invests in Canada's tar sands****Upgraded**

Sep 3rd 2009 | FORT MCMURRAY  
From The Economist print edition

**Rumours of the death of a controversial oil province prove exaggerated**

CRITICS of the exploitation of Canada's tar sands watched gleefully this year as the collapse in the oil price did what their opposition could not: dent the oil industry's enthusiasm for this mixture of sand and bitumen, which generates a lot of pollution when it is extracted and "upgraded" into oil. A year after crude markets began their slump, however, there are green shoots appearing in the ravaged muskeg soil. On August 31st PetroChina, a state-owned Chinese oil firm, agreed to pay C\$1.9 billion (\$1.7 billion) for a majority stake in two tar-sands projects.

Admittedly, the frenzy of recent years is over. By one count, 13 projects that were on the books a year ago have been delayed or cancelled. Investment is falling. Between 2008 and 2010 developers were expected to spend C\$128 billion on tar sands projects. Now the outlay will be around C\$80 billion, according to the Oil Sands Developers Group (OSDG), an industry body. Forecasts of oil production from the tar sands have also taken a hit. Just a couple of years ago the Canadian Association of Petroleum Producers predicted output would reach 4m barrels a day (b/d) by 2020. Now it says 3.3m b/d by 2025.

But that is still more than double current production. The bulk of that growth will come from projects that are already under way. In May Imperial Oil said it would go ahead with its C\$8 billion Kearl project to bring 110,000 b/d of bitumen into production within three years. Output will eventually rise to 300,000 b/d. And although the number of workers living in temporary accommodation north of Fort McMurray, Alberta, in the heart of the tar sands, has fallen from over 27,000 last year to around 23,000 now, that is higher than in 2006, when the boom was in full swing.

Imperial, in which Exxon Mobil owns a majority stake, estimates that the cost of developing Kearl fell by as much as C\$1 billion during the year it was delayed. Falling costs could bring other projects back into contention, too. Just a year ago an oil price of around \$80 a barrel was needed to justify new developments. Now that price has dropped to around \$60, says Suncor, another developer. Steel, cement and labour have all got cheaper. "I had contractors naming their price to me a couple years ago," says a manager from Shell's Muskeg River mine. "Now I have three different companies competing for a contract." Consolidation of the kind that saw Suncor, historically one of the biggest investors in the tar sands, complete its purchase of Petro-Canada last month, might help reduce costs further through economies of scale.

There is also good news for those firms that do not simply mine the tar sands, but inject steam underground to separate the sand from the bitumen "in situ"—a process that accounts for about half of the region's output. The price of natural gas has plummeted with the discovery of vast new reserves across North America, including in the neighbouring province of British Columbia. Cheaper gas, in turn, means cheaper steam.

Meanwhile demand for crude from the tar sands is growing. The opposition of American environmentalists notwithstanding, consumption by refineries in the Midwest will hit 2m b/d by 2015, estimates the OSDG. Cambridge Energy Research Associates, a consultancy, says Canada's share of the American oil market could grow to 37% by 2035 from 19% last year. Output from the tar sands could reach 6.3m b/d by then, the consultancy believes. The Canadian Energy Research Institute, a local think tank, says rising output could contribute about C\$3.6 trillion to Canada's GDP over the next 25 years.

That makes the downturn in the tar sands less a collapse than a pause for breath. Some even worry that another damaging boom could be in the offing. Peter Lougheed, a former premier of Alberta, says the inflation that accompanied the free-for-all of recent years made life expensive for ordinary Albertans and undermined the province's other industries. New projects should be staggered, with only one coming on-stream at a time, he argues. Development may be moving at a more sedate pace for the time being. But the tar sands' continued appeal, combined with predictions of a recovery in demand for oil, could raise the issue again, and sooner than many expected.



**Walt Disney buys Marvel Entertainment****Of mouse and X-Men**

Sep 3rd 2009 | NEW YORK  
From The Economist print edition

**Will Disney's latest acquisition prove as Marvellous as it appears?**

Ronald Grant

NOT even the combined powers of Spiderman, Iron Man, the Incredible Hulk, Captain America and the X-Men could keep The Mouse at bay. On August 31st Walt Disney announced it was buying Marvel Entertainment for \$4 billion, just days after the comic-book publisher had celebrated 70 glorious years of independence, during which it had created many of the most famous cartoon characters not invented by Disney itself.

In fact, Marvel did not put up much of a fight, accepting what most analysts think was a generous price. Disney will get access both to Marvel's creative minds and—potentially far more valuable in an age when familiar stories rule the box office—an archive containing around 5,000 established characters, only a fraction of which have yet made the move from paper to the silver screen.

Marrying Marvel's characters with Disney's talent for making money from successful franchises is a good idea. In recent years Disney has proved the undisputed master at exploiting the same basic content through multiple channels, including films, websites, video games, merchandising, live shows and theme parks.

The edgier, darker Marvel characters should fill a hole in Disney's much cuddlier portfolio. This currently covers most people from newborn babies, through the addictive "Baby Einstein" DVDs (popularly known as "baby crack"), to adults, through its Touchstone label. Disney's own cartoons, and the newer ones created by Pixar, an animation studio it bought in 2006 for \$7 billion, appeal to children. "Hannah Montana", a hit television show, caters to pre-teen girls. The Marvel characters should be just the thing for boys of the same age, whom Disney has found especially hard to attract of late.

However, many of Marvel's best-known characters already have contractual obligations to various rival media conglomerates that will not be easily or quickly undone. Sony has an indefinite hold on Spider-Man; News Corporation exerts similar control over the X-Men. Universal owns distribution rights to the Hulk and long-term theme-park rights in Florida to several characters. This is a pity, because Disney's theme parks are a part of its business where teenage boys would particularly welcome the contrast that Marvel's superheroes would provide to the Magic Kingdom's oppressive wholesomeness.

Another risk is one that often presents itself in mergers, especially those involving creative types: a clash of cultures. Happily for Marvel, Disney is no longer the corporate control-freak it was under its former boss, Michael Eisner. His successor, Bob Iger, has turned out to be a relatively hands-off boss, with the Pixar acquisition a model of the sort of treatment Marvel can expect. Indeed, John Lasseter, the chief creative force behind Pixar, reportedly played an important role in reassuring Marvel's talent that their culture would be safe in Disney's hands.

Also fully behind the deal is Stan "the Man" Lee, a living legend of the cartoon world who helped create many of Marvel's best-known characters during the 1960s. Mr Lee, who recently launched his first digital comic as part of a partnership between his new firm and Disney, has predicted that the Disney-Marvel merger will prove "a terrific deal which will be extremely beneficial to both companies. The synergy between them is perfect."

Ironically, in the 1960s, Mr Lee tried, without success, to convince his bosses to turn Marvel into a multimedia company like Disney. Now, albeit in a roundabout way, one of his outlandish fantasies is about to become a reality.



**Disney is bringing the commercial heft**

## Google books

## Tome raider

Sep 3rd 2009 | SAN FRANCISCO  
From The Economist print edition

**A fuss over the internet search firm's effort to build a huge digital library**

Corbis

PAUL COURANT, the dean of libraries at the University of Michigan, jokes that he also runs "an orphanage". Among the books on his shelves are such seminal texts as "Blunder Out of China" and "The Appalachian Frontier: America's First Surge Westward", which are protected by copyrights belonging to people who cannot be found. Known as "orphan" books, such titles are one element of a controversial plan by Google, the world's biggest internet company, to create a vast online library.



Several years ago Google began working with research libraries in America to create digital copies of their collections, parts of which it made available online. Not long after, a group of authors and publishers sued the company for breach of copyright. Now Google and its former antagonists are seeking judicial approval for a deal they reached last year to settle the class-action suit. Among other things, this would allow the company to scan millions of out-of-print books, including orphan works, without seeking permission from individual copyright holders. Google could then sell individual works or access to its entire library, provided it paid a share of the proceeds to owners of the copyrights, if they can be found. (It has already set aside \$125m to that end.) Next month a federal court is due to hold a hearing on the agreement, which will help shape the future of the digital publishing.

Opposition to the deal is brewing all around the world. On August 31st the German government filed a submission to the American court arguing that the agreement, which encompasses books by German authors published in the United States, would violate Germany's copyright law. French publishers also claim the agreement will contravene laws in their homeland. They note that there are no plans for European representatives on the book-rights registry that would be set up under the deal to collect and distribute payments due to copyright owners. This has heightened suspicions that foreigners will be fleeced.

In Japan two noted writers have filed a complaint with local authorities about Google's actions. Many American firms oppose the deal, including Microsoft and Yahoo!, two of Google's big competitors, as well as Amazon, a big retailer of books in both paper and electronic form. Amazon argues that Congress, rather than Google and its allies, should decide how copyrights should be handled in the digital age.

Together with the Internet Archive, a non-profit organisation which runs a rival project to digitise libraries' contents, these firms have formed a group called the Open Book Alliance to campaign against the agreement. A posting on the Alliance's website claims that the agreement would create a monopoly in digital books that would inevitably lead to fewer choices and higher prices for consumers. Such complaints have attracted the attention of America's Department of Justice, which is examining the agreement to see whether it is anti-competitive. It is due to send its findings to the court by September 18th.

In response, Google executives point out that the deal cannot be opened up to other firms because of the way class-action litigation works in America. However, it is a non-exclusive arrangement, so other companies are free, in theory, to seek a similar deal to Google's. But in practice few are likely to enter this legal maze, and go to the expense of scanning millions of books, without any certainty of making money.

In spite of this, Google claims that rather than suppressing competition in the emerging market for electronic books, the agreement would increase it by offering a web-based alternative to expensive proprietary systems such as Amazon's Kindle. Having bought a book from Google, customers would be able to read it on any device with internet access. Moreover, by clarifying the copyright status of millions of digital books, the deal would also make it easier for firms other than Google to strike deals to use them.

This may explain why the agreement is garnering support from some unexpected quarters. In a recent letter to the court, lawyers for Japan's Sony, which also makes readers for electronic books, argued that if the agreement is approved it would have "numerous and significant pro-competitive effects". Viviane Reding, the European Union's commissioner for telecoms and media, has publicly hailed new business models such as Google's, which she thinks will complement the EU's Europeana initiative to digitise Europe's cultural heritage. By promising to bring many more books like "The Appalachian Frontier" to an exciting new digital frontier, Google stands a fighting chance of winning its case.

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## Oracle and Sun Microsystems

## Europe steps in

Sep 3rd 2009

From The Economist print edition

## The European Commission takes a good look at a big technology merger

FOLLOWERS of competition policy had expected the next big antitrust news to come out of Washington. After all, the administration of Barack Obama has let it be known that it would be more vigilant, particularly with regard to information technology. But on September 3rd it was the European Commission that grabbed the limelight.

Its trustbusters announced that they will take a closer look at the proposed \$7.4 billion acquisition of Sun Microsystems, a troubled hardware-maker, by Oracle, the world's second-biggest software firm. Is the world heading for another transatlantic row about antitrust akin to that of 2001, when a planned union between General Electric (GE) and Honeywell caused a stink?

There are certainly parallels. The two firms are both based in America. And just as in 2001, the Department of Justice had already cleared the deal—on August 20th. But Brussels has a mind of its own. It worries in particular that the merger will reduce competition in the market for corporate databases. Oracle is the world's biggest vendor of "proprietary" (essentially meaning "paid for") software to run such databases, with a market share of nearly 50%. Sun is the owner of MySQL, the most widely used "open-source" database software, which already competes with Oracle's products and could become more of a threat in the future. Neelie Kroes, the competition commissioner, said that she had "serious concerns" that the deal would reduce choice and lead to higher prices.

Yet this is where the similarities end. In the case of GE and Honeywell the European Court of First Instance criticised the commission's legal reasoning, but upheld its decision. Brussels has since adopted new guidelines making it harder to block mergers. And although the commission has extended its review of the deal for several months, it will not necessarily block it. It also thought twice before allowing Google, the web giant, to take over DoubleClick, an online-advertising agency in 2008.

Brussels may simply want to gather more information. The case is not clear-cut. Oracle argues that MySQL's revenues are negligible, particularly in Europe where they amount to a mere \$17m annually. And since MySQL is open-source, anyone can use the program's underlying recipe. So if Oracle were to rein in MySQL, the software's community of developers and users could always create and promote an alternative.

While Brussels ponders all this, Sun remains in limbo—and will probably lose business to such rivals as Dell and HP. Its revenues dropped more than 30% in the second quarter compared with a year earlier. Meanwhile, the expected meeting of minds between America's newly invigorated trustbusters and Europe's also seems to have been put on hold.

## Selling designer goods online

**When cheap is exclusive**

Sep 3rd 2009 | NEW YORK  
From The Economist print edition

**Hard times for luxury retailers are good times for discount fashion websites**

Alamy

**In a few weeks it will all be on Rue La La**

THE racks of expensive gowns and shoes sit, serene and mostly untouched, on the floors of Saks Fifth Avenue, Bergdorf Goodman, Bloomingdale's and almost every fancy department store. In a sign of how consumers' newfound thrift has hurt luxury retailers, Saks Incorporated, the parent company of Saks Fifth Avenue, recently announced losses of more than \$50m in the three months to July. Sales are down more than 20%. The recession, it seems, has spelt an end to Americans' appetite for luxury—at department-store prices, at any rate.

Yet luxury e-tailers, which sell designer goods online at discounted prices, are flourishing. The slowdown has actually helped them, simultaneously producing seemingly endless supplies of unsold inventory and forcing consumers to tighten their belts. That has let American e-tailers such as Gilt Groupe, HauteLook and Rue La La, and their French rival Vente-privee.com, sell last season's designer apparel for as much as 80% off the original price.

But low prices are not the websites' only allure. Their sites are open only to those who have received an e-mail inviting them to join from another member. This lends them an air of exclusivity and creates the sort of buzz marketers crave, says Adam Bernhard, the boss of HauteLook. The sites also put new items on sale at the same time every day for a limited period, usually no more than 24 hours. That makes shopping an urgent and competitive daily activity for many members. (Cleverly, the sites do not say how many items of each size and colour they have, so customers feel even more pressure to buy right away, lest they miss out on the last pair of size 37 hazel Jimmy Choo pumps.)

Designers, for their part, can use the sites to get rid of stock quickly and discreetly, sparing them the disgrace of seeing their heavily discounted products lingering on sale racks in full public view. Most consumers do not even know which designers are available through luxury e-tailers until they become members. The sites shield themselves from search engines, so they do not pop up in response to online searches for the brands they offer. That has encouraged grand firms like Cartier to sell their wares through them.

Ben Fischman, the boss of Rue La La, which started in 2008 and expects to have revenues this year of around \$130m, thinks the "theatrical environment" of his site keeps customers hooked. He says retailers became complacent during the boom years and failed to make the most of new technology. Rue La La recently launched an iPhone application to make it easy for members to make purchases while on the move. It has also started selling wine, spa services and travel packages in addition to clothes. Vente-privee.com has even sold yachts and apartments.

Although none of the sites has yet reached Amazon-like proportions, they are doing well. Gilt, which was launched by two graduates of Harvard Business School in 2007, has over 1.4m members in America; it expects revenue of \$400m next year. Vente-privee, which started in 2001, says its membership is 8m, up

42% from last year. Even Net-A-Porter, a popular e-tailer that offers designer merchandise at full price, is doing well. It recently launched a discount site, called the OutNet, because it does not want to lose out on the booming discount market.

E-tailers are also looking to expand geographically. Vente-privee.com has operations in Germany, Britain and Spain as well as France. Gilt recently launched a site in Japan that has over 200,000 members.

Retailers, however, are fighting back through their own websites. Neiman Marcus, for example, has started offering sales of limited duration to selected customers, in an attempt to mimic the “insider” feeling that the fashion e-tailers trade on. There is talk of new technology to make shopping both easier (through software that would allow buyers to assess whether a particular cut will be flattering for their build) and more social (through chat rooms, for example).

However, Hamilton South, a founding partner of HL Group, a retail consultancy, thinks the future of luxury retail may not be online but on television. He believes that viewers will soon be able to use their remote controls to buy the clothing that appears in the programmes they are watching. Retailers need to stop thinking about making shopping entertaining, he says, and concentrate on making entertainment “shopable” instead.



## Face value

## Dummies for finance

Sep 3rd 2009

From The Economist print edition

## Andreas Treichl of Erste Bank thinks banks should be kept small and simple

Reuters



HE MAY be descended from five generations of bankers and head a large bank himself, but Andreas Treichl has a pretty low opinion of his profession. He had hoped to become a conductor, but changed his mind on the advice of Leonard Bernstein. The maestro saw him perform, Mr Treichl says, and "told me to go into banking because one would do better as a mediocre banker than one would as a mediocre conductor."

Happily, most observers consider his tenure at Erste Bank, Austria's second biggest, which he has run for more than a decade, better than mediocre. He has transformed the staid, insular, 200-year-old savings bank into one of the largest retail banks in central and eastern Europe. Although he led it into a region that subsequently found itself on the front-line of the financial crisis, he has managed to keep it profitable and independent. To be sure, Erste Bank has not escaped the crisis unscathed. Earlier this year it had to raise €1.8 billion (\$2.3 billion), including €1.2 billion from the Austrian government, to bolster its capital, and provisions for bad loans have more than doubled in the first half of this year compared with a year earlier. Yet these setbacks look inconsequential when set against the monstrous losses reported by bigger banks farther afield.

That Erste Bank continues to stagger on in perilous emerging markets while many of those that bet on American or British housing have fallen flat is explained, at least in part, by the fact that banking was not Mr Treichl's first choice of career. He built a business on the assumption that commercial banks do not have the pick of the best or the brightest, and should therefore keep their strategies simple and their ambitions relatively modest.

"People who want to make a lot of money fast go to work in investment banks, but people who work in commercial banks are pretty average people," says Mr Treichl in an office so understated that it almost seems calculatedly so. On the whiteboard near his desk are the colourful doodles of one of his three sons—testimony to a recent spot of baby-sitting. Near the door is an open carton containing dozens of boxes of chewing gum. Mr Treichl's prescriptions for banking are as unpretentious as his office. "We should not think we can invent something brilliant. If we could we would be working somewhere else," he says of the exotic credit derivatives that spread risk, like a contagion, through the financial system. "We bought the crap but we didn't invent it."

Mr Treichl's keep-it-simple philosophy has steered his firm's strategy. Instead of trying to expand into investment banking, a business with juicy margins in good times but horrible losses in bad, Erste Bank has instead concentrated on expanding its retail banking business into central and eastern Europe, where

it has subsidiaries stretching from Austria to Ukraine. In most countries where it does business, it owns one of the larger local banks. In the Czech Republic, for instance, it holds almost a third of all retail deposits, and in Romania it has a quarter. Erste Bank also has a policy of balancing loans and deposits. In the go-go years before the credit crunch, that left it growing more slowly than many rivals. But because it did not rely on flighty capital markets for funds, it has weathered the downturn better. Conservatism has other rewards, too: being a big, safe-sounding bank in small countries has allowed it to pay uncompetitive interest rates and still keep pulling in deposits.

It is also firmly a local bank. Most of its main markets are just a few hours' drive away from the head office in Vienna. In the waiting room on the executive floor, the head of risk from a subsidiary in a neighbouring country is pouring himself a coffee, having driven for an hour from his own office to talk about a new computer system. This localism underscores one of Mr Treichl's deeply held beliefs: that big banks fail because they become unmanageable. "If you run something like Citi how the hell do you know what's going on in Poland if you only go there every three years?" he asks. "This is very much a people business. I need to touch and smell and feel what's going on." It is a view formed by his many years in various bits of the far-flung empire of Chase Manhattan, a company about which former employees joke that it "trained the best but kept the rest". Mr Treichl joined it as a credit analyst in New York and worked in its offices in Brussels, Athens and Vienna before joining Erste Bank some 15 years ago.

It is hard to find fault with the argument that many big banks have become ungovernable. Even HSBC, a British bank with a sterling reputation, ingrained prudence and a history of astute acquisitions has stumbled in recent years when entering markets where unfamiliarity prevented it from bringing these traits to bear. But there is a corollary. Size and geographic reach allow big banks to spread risk. Erste's profitability over the next few years, by contrast, will depend on a few fragile economies in one small part of the world—albeit ones that are not moving in unison, and for which Austria has mustered an international bail-out.

## **Balkanising subprime**

Being decidedly local also carries other, idiosyncratic risks. Austrian banks have, in recent years, been enthusiastically peddling risky foreign-currency mortgages at home and abroad. Erste Bank was far from the worst culprit in this regard, but it did opt to issue some mortgages denominated in Swiss francs and euros to Hungarians and Romanians rather than entirely surrender a booming new business to more daring rivals.

Banking also has an annoying knack of turning today's genius into tomorrow's fool. Devotees of back-to-basics banking such as Mr Treichl and Banco Santander's Emilio Botín are riding high only by comparison with racier (and now disgraced) rivals who tried to combine investment banking with retail and who boosted returns buying credit derivatives they did not understand. Yet their stars may also fall if a long economic slowdown produces bigger-than-expected losses at conservative banks, too.

## The electrification of motoring

### The electric-fuel-trade acid test

Sep 3rd 2009

From The Economist print edition

**After many false starts, battery-powered cars seem here to stay. Are they just an interesting niche product, or will they turn motoring upside down?**

Tesla



**A plug for an electric car**

IN 1995 Joseph Bower and Clayton Christensen, two researchers at the Harvard Business School, invented a new term: "disruptive technology". This is an innovation that fulfils the requirements of some, but not most, consumers better than the incumbent does. That gives it a toehold, which allows room for improvement and, eventually, dominance. The risk for incumbent firms is that of the proverbial boiling frog. They may not know when to switch from old to new until it is too late.

The example Dr Bower and Dr Christensen used was a nerdy one: computer hard-drives. But unbeknown to them a more familiar one was in the making. The first digital cameras were coming on sale. These were more expensive than film cameras and had lower resolution. But they brought two advantages. A user could look at a picture immediately after he had taken it. And he could download it onto his computer and send it to his friends.

Fourteen years on, you would struggle to buy a new camera that uses film. Some of the leading camera-makers, such as Panasonic, are firms that had little interest in photography when Dr Bower and Dr Christensen published. And an entire industry, the manufacturing and processing of film, is rapidly disappearing.

Substitute "car" for "camera" and you have a story that should concern thoughtful bosses in the motor and oil industries. Internal-combustion engines have dominated mechanised road transport for a century, but the past year or so has seen the arrival of a dribble of vehicles driven by electric motors. That these are the products of small, new firms, or of established non-carmaking companies, supports the Bower-Christensen thesis. But next year the big boys, encouraged by legislative pressure to produce low-emission vehicles, will leap out of the boiling water and join in. Their progress towards greenery will be an important theme of the Frankfurt motor show this month.

Bold claims are being made. Carlos Ghosn, who leads the Renault-Nissan alliance, thinks 10% of new cars bought in 2020 will be pure-battery vehicles. A report by IDTechEx, a research consultancy based in Cambridge, England, reckons a third of the cars made in 2025 will be electrically powered in one way or another. If that trend continues, liquid fuels might become as obsolete as photographic film.

## The Li-ion roars

The technological breakthrough that led to digital cameras was the charge-coupled device, or CCD. The equivalent for electric cars is the lithium-ion battery, or Li-ion. Just as CCDs were used first in specialist applications, such as television cameras, so Li-ion batteries have been used in laptop computers and mobile phones. By 2003, however, their price had dropped to a level where Elon Musk, an entrepreneur who had helped launch PayPal, an online payments service, thought that they might be cheap enough to form the basis of an all-electric sports car.

The “killer app” of this car would be its acceleration. Unlike internal-combustion engines, electric motors have full torque, as pulling-power is called, from zero revs. They are thus predisposed to go like a bat out of hell without the aid of a gearbox. Mr Musk’s brainchild is known as the Tesla Roadster (pictured above). The sports version goes from zero to 100kph (62mph) in 3.7 seconds—not much slower than a top-line Ferrari.

The desire for acceleration at any price (\$121,000, since you ask) is a niche market, but niche markets are the classic way in for a disruptive technology. Tesla’s next vehicle, the Model S, is a more mainstream family car. At about \$50,000 it will still not be cheap, but it should be cheap enough to appeal to those who like to think of themselves as early adopters, but who also have spouses and children to worry about.

Another reason for the high price of Tesla’s cars is their range. According to its maker, the Roadster can travel almost 400km between charges. The Model S should be able to do even better. But cheaper electric cars have to make a trade-off between range, price and convenience. Since batteries can be recharged only slowly (the process takes hours, not minutes), a car’s effective range is limited by the size of its battery. And batteries are expensive.

A lot of researchers are working on making them cheaper and faster to charge, of course. In the meantime, though, there are three approaches to the trade-off, each of which has its champions. One is to accept the range limit and design small, thrifty vehicles specialised for city use. This has the virtue of simplicity and the vice of inflexibility. The second is to add a petrol-driven generator known as a “range extender”. This complicates the mechanics, but provides the driver with a security blanket, for he knows he will never be stranded if he can find a petrol station. The third answer is to keep the car all-battery, but to introduce a network of battery-exchange stations similar to the existing network of petrol stations, so that someone who is running out of juice can pull in, swap over and pull out.

## Celling the future

A leading contender in the first category is Mitsubishi’s i-MiEV, which should go on sale next year. Its initial price will be ¥4.6m (\$49,000), although that is expected to be cut in half once the car goes on sale outside Japan. That halving (and potential quartering) of price compared with a Tesla Roadster is achievable because the i-MiEV’s battery has only 88 Li-ion cells, rather than the Tesla’s 1,800. It uses its limited resources well, however. Its quoted range is 160km. Other electric city cars are expected from firms such as Fiat and Toyota. And in November Daimler (which also owns 6% of Tesla) plans to start producing a Li-ion-powered version of its Smart Fortwo. In Germany, a full charge will cost about €2 (\$2.80) and keep the vehicle going for around 115km—although there is room in the car, as the name suggests, for only two people.

City cars are all very well as runabouts, but for electric vehicles to become widely adopted and displace fossil fuels they will have to crack the saloon-car market, too. To do that with an all-battery car will be a tall order, as the price of the Model S suggests. Most carmakers are taking a more conservative approach than Tesla’s, and it is here that the second answer, a battery plus a generator, heaves into view.

In an existing hybrid, such as the Toyota Prius and the Honda Insight, the wheels can be turned directly by both the petrol engine and the electric motor (and all the energy is supplied originally as petrol). Such vehicles are known as “parallel” hybrids as a result. In the new battery-plus-generator designs, also known as “series” hybrids, the wheels are driven only by the electric motor. The petrol engine is there to create more electricity, if it is needed, but the batteries are usually recharged from the mains.

Rex Features

The most talked-about of the battery-plus-generator models is General

Motors' Chevrolet Volt (to be sold in Europe as the Ampera). This car, which should be in the showrooms next year at a price of around \$40,000, has an all-battery range of 65km, after which the range-extender will kick in. GM reckons 65km is enough to cover 80% of daily usage in America, and similar figures pertain to other countries. Mitsubishi says 90% of drivers in Japan cover less than 40km on weekdays and 80% cover less than 60km at weekends. Robert Bosch, a German car-parts firm, reckons that in Germany the 90% figure is less than 80km.

Most of the big carmakers have series hybrids under development. In some cases the range-extendors could be offered as an extra on a battery-powered model, leaving it up to the customer to decide what sort of range he wants. Daimler is taking this approach with its BlueZero cars. These five-seater vehicles will be available in three versions. A battery-only model will have a range of 200km. Another will offer 100km of battery-powered range, but will also have a petrol generator to extend it. A third will use a hydrogen-powered fuel cell to generate electricity.



**A plug for an electric car**

The third answer, though, is perhaps the most radical. Instead of a petrol engine, with its widespread infrastructure of filling stations providing the security blanket, why not build new infrastructure to refuel cars with new, fully charged batteries?

The leading proponent of this idea is Better Place. This firm, which is based in California, has been scouring the world for car markets that are, in its terminology, "islands" and offering to fit them with networks of car-charging and battery-swapping stations that will use robots to exchange exhausted batteries for fully charged ones in seconds.

Better Place defines an island as a place with an edge that motorists rarely cross, and the first to be picked by Shai Agassi, the firm's founder, was Israel. Though more of the country's edge is land than sea, few cars leave by either route. Israel is now being fitted out with the Better Place infrastructure. Meanwhile, Nissan is tooling up to start building cars with batteries of the appropriate dimensions, for sale starting next year, and Tesla plans to offer swappable batteries on the Model S.

Other "islands" that Better Place has signed deals with include Denmark, Hawaii and Australia. The firm also has a partnership with Tokyo's largest taxi operator, Nihon Kotsu, to provide swappable batteries for a new fleet of electric taxis which will take to the streets of the Japanese capital. With some 60,000 taxis in Tokyo, this could turn into a huge market.

Besides providing drivers with secure refuelling, the Better Place approach has a second advantage. Separating ownership of the battery from ownership of the car changes the economics of electric vehicles. If you rent the battery rather than buying it, that becomes a running cost (like petrol) and the sticker price of the car drops accordingly. This might not matter to a sophisticated economist, who would amortise the battery cost over the life of the vehicle. Many people, though, are swayed by the number they write on the cheque that they give to the dealer.

Better Place, indeed, plans to go further. It will charge for its services (battery and electricity) by the kilometre travelled. The cost per kilometre will be lower than for petrol vehicles, and if you sign up for enough kilometres a month, it will throw in the car for nothing.

## **Watt's up**

That is possible in part because electric cars are efficient. According to Bosch's calculations, a conventional internal-combustion-engined car can travel 1.5-2.5km on a kilowatt-hour (kWh) of energy. A hybrid with a combined electric and diesel engine would go up to 3.2km. But a battery-powered car can travel 6.5km.

On top of that, the energy put into them is cheaper. Owners with garages or driveways can top up at night using the domestic supply. The long recharge time will thus not be an issue, and the electricity will be cheap, off-peak power. Even if more expensive daytime power is needed (some office and supermarket car parks are already being fitted with recharging points, in anticipation of mounting demand), the cost of such juice is still favourable compared with petrol.

Only for garageless owners does recharging become complicated. They will need street-based electrical

infrastructure, and a lack of this will limit the spread of electric vehicles to start with. That said, the batteries are expected to get better quite fast. No one is talking of Moore's Law—a doubling of capacity every 18 months or so. But an improvement of about 8% a year into the foreseeable future is on the cards. A doubling in a decade, in other words.

Bosch, for example, calculates that a car fitted with a 40kW motor capable of speeds of up to 120kph would need a Li-ion battery with a capacity of 35kWh. Today such a battery might cost around €17,000. With the technology and economies of scale Bosch expects to be available in 2015, that could drop to €8,000-12,000. As Ford recently pointed out, if the industry were to move towards a common standard for battery packs, this would help boost production volumes and so bring prices down even more. Bosch reckons that for electric cars to become universally popular, a threefold increase in energy density and a fall of two-thirds in the price of batteries will be needed. To that end, it has set up a joint venture with Samsung of South Korea to develop and produce Li-ion batteries for automotive use.

Indeed, battery firms, both old and new, are coming up with innovations that add up to the 8% annual gains. These involve changes to the lithium chemistry of batteries, their mechanical properties and the electronics that control them. Among the newcomers are two American firms, A123 Systems and Boston Power, both of which are based in Massachusetts.

A123 was founded in 2001 and is backed by General Electric. It uses nanoscale materials to boost the performance of its batteries (making an electrode out of nanoparticles increases its surface area, which in turn decreases the battery's internal resistance and improves its ability to store and deliver energy). Its batteries are already used in power tools, and the company has formed alliances to supply Chrysler and SAIC Motor Corporation of Shanghai with car-sized versions. Its batteries were also being considered for the Volt, but GM eventually picked ones made by LG Chem, a South Korean firm.

Boston Power, founded in 2005, makes fast-charging Li-ion cells for consumer products, including some Hewlett-Packard laptops. The company, which has a factory in Taiwan and plans for one in Massachusetts, is developing a Li-ion battery called Swing for automotive use.

Some carmakers are forming partnerships with battery-makers to ensure supplies and gain access to technology. Others are building their own battery factories. And some are doing both: Nissan has formed a joint venture with NEC to produce advanced Li-ion batteries that use a laminated structure to improve cooling.

The firm is planning to put the batteries in a new five-seater family car called the Leaf that it intends to launch late next year in Japan and America as part of its alliance with Renault. The group plans to build 200,000 a year, the most ambitious production target so far for a pure-battery car. The Leaf will be powered by an 80kW electric motor and will have a range of at least 160km on a full charge. It can be charged to 80% capacity in 30 minutes with high-powered quick chargers which Nissan hopes will be installed in petrol stations and other public places.

At least one battery-maker, though, has loftier ambitions than merely supplying carmakers with its wherewithal. BYD, a Chinese firm, seems to have Panasonic's success in the world of cameras in mind. Earlier this year it launched the first of what it promises will be a range of electric cars that will undercut those made by American and European producers, in part by using a novel material in the batteries' electrodes. It claims this will make those batteries both cheaper than conventional types, and faster charging. BYD started with fleet sales in China and plans to begin private sales there later this month and launch its first vehicle in America next year. The company is being watched closely, not least by Warren Buffett, a celebrated American investor who has taken a 10% stake in it.

This will be an interesting experiment. There is a lot more to an electric car than its battery, of course. But established car firms that think their know-how in other parts of carmaking will save them may find themselves in the same position as those 19th-century carriage-makers who thought a "horseless carriage" would, literally, be that. For, once the engine block and the gearbox are gone, the game of car design changes. And batterification could bring about other changes, too.

## **Which frogs will live?**

A number of carmakers and component companies are, for example, looking at getting rid of drive trains, and fitting electric motors directly into cars' wheels. Such systems would be operated electronically, so they would also provide traction control.



Michelin, in particular, is developing what it calls the Active Wheel. This gives the firm the ability to provide a complete power, braking and suspension package for electric cars. One of the set-ups on which Michelin is working has two motors mounted within each wheel. One turns the wheel. The other works an active-suspension system that dampens the usual pitching and rolling of a car as it drives along. Besides traction control, the driver (or the vehicle's computer) would be able to select different suspension settings to suit motoring conditions.

One of the first cars to use Michelin's four-wheel-drive ActiveWheel set-up is likely to be the Venturi Volage. A Li-ion battery gives this a range of around 320km and a top speed of 150kph. It is designed to accelerate to 100kph in under five seconds, according to Venturi, a specialist carmaker based in Monaco. Like the Tesla Roadster, it is not expected to be cheap.



With wheel-mounted motors that mix motive power, braking and active suspension, more of the things conventionally fitted to a car become unnecessary. Because a gearbox, clutch, transmission and differential unit are no longer needed, and springs and other suspension items will probably go, too, vehicles could assume all sorts of shapes and sizes.

Without the cost and complexity of many of the parts hitherto required to make a car, the shape of the automotive industry could be transformed as much as cars are. As for the oil companies, if the visionaries are correct, they risk finding themselves in the wrong business. Some researchers already have battery materials they reckon could be recharged in the time it takes to freshen up and have a snack at a service station. If they are right, the need for even a range-extender vanishes.

That is still a biggish "if", of course. The efficiency of internal-combustion engines is improving, too—and as the advert below shows, electric cars have come and gone in the past. But propelling modern transport by means of serial explosions in an array of tin-cans does seem an incredibly primitive way of doing things. The time is ripe for a change.

## Banks' funding needs

## Total liabilities

Sep 3rd 2009

From The Economist print edition

## Getting banks to improve their funding profiles will not be easy

Illustration by S. Kambayashi



AN AMERICAN judge once said that it was hard to define pornography, but "I know it when I see it". Something similar is true of doomed banks. It is difficult to establish any archetype for failure from the past two years. Banks with high capital ratios, such as Lehman Brothers and Iceland's lenders, imploded, while those with lower ratios survived. Plain-vanilla retail banks blew up while some black-box trading shops prospered. Both small and big firms collapsed. Spotting a doomed bank, it seems, may only be possible once it is going to hell.

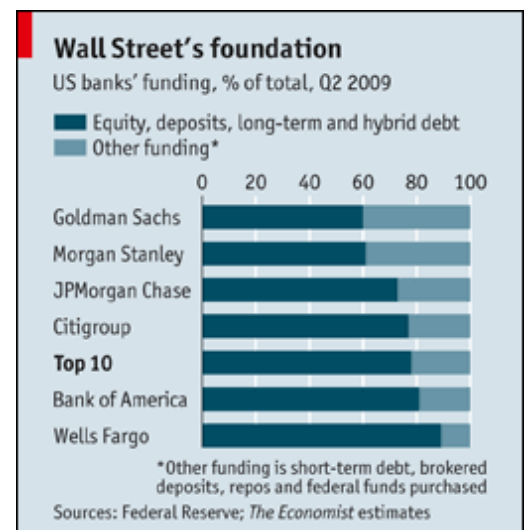
Yet there was a common ingredient in most failures: an over-reliance on wholesale borrowing. As the Western banking system has expanded over the past two decades its assets have grown to about 2.5 times its deposits, forcing firms to seek other types of finance. Bear Stearns and Northern Rock, largely reliant on short-term borrowing, faced the modern version of a "run" when their counterparties refused to roll over debts. Most other banks suffered some loss of confidence, forcing them to turn to funding from the state.

Unsurprisingly, regulators think that forcing banks to find more secure funding, along with more capital, will make the system safer. The Basel club of bank supervisors is considering new liquidity rules, as are many national regulators. New Zealand has already drawn up concrete rules (see [article](#)). It is not clear how far this can go. There can be no return to an idealised past where only a dollar deposited in a bank would be loaned out. To force banks to rely only on deposits would require a big shrinkage of their balance-sheets, with devastating economic implications. Besides, not all deposits are sticky. The Bank of England reckons that \$100 billion of Russian deposits were shipped out of Britain in the last quarter of 2008.

Far from improving, the funding profile of the Western banking system has been getting even sicker this year. Banks have been raising equity and long-term debt and gathering deposits, but in the grand scheme of things their efforts have made little difference. For America's top eight commercial banks such higher-quality forms of funding have risen only slightly, from 78% to 80%

of the total in the past six months. America's two surviving investment banks, Goldman Sachs and Morgan Stanley, still depend on shorter-term borrowing, usually secured with collateral (see chart). This is fairly reliable but, as Bear Stearns showed, in a market meltdown it can dry up without central-bank support. In Britain, Lloyds Banking Group, a leading wholesale-funds junkie, still has half of its total funding maturing in under a year.

If the duration of funding has not changed much, its source has. In America, the euro zone and Britain, central-bank lending and public guarantees of bank bonds have reached about \$2.7 trillion. That equates to about 9% of banks' wholesale funding, using IMF estimates. Support is concentrated on the banks with the worst funding profiles. So Dexia in Belgium has €82 billion (\$117 billion) of state funding, and Lloyds could have up to £100 billion (\$162 billion).



The original idea was that state support could be withdrawn swiftly as the panic subsided. America's main debt-guarantee scheme will close to new issuance next month (with those guarantees already issued expiring in 2012). Europe's schemes are typically due to close by the end of the year, with guarantees expiring between 2012-14. The hope is that banks will not only be able to refinance debt on their own but also extend its maturity, cutting their dependence on fickle short-term funding.

Funding strains have eased. So far this year, Western banks have issued \$645 billion of bonds without government guarantees, according to Dealogic, a research firm. But the idea that the banking system can improve its funding profile at the same time as it weans itself off explicit state guarantees looks wildly unrealistic. This partly reflects the sheer volumes of debt involved. As well as turning over existing short-term borrowings of some \$18 trillion, Western banks have to refinance longer-term debts that are maturing at the rate of about \$1.5 trillion a year. With securitisation markets damaged and confidence in banks battered, that will not be easy.

It is also unclear that the most needy banks can borrow freely yet. Lloyds issued an unguaranteed and unsecured ten-year bond on September 3rd at 193 basis points above government yields, about double what the safest British bank, HSBC, might pay. Not only is this rate "uneconomic", according to one banker, but Lloyds only raised €1.5 billion, a drop in the ocean. In July Dexia sold a similar five-year bond at 160 basis points above government yields, but the issue size, at €1 billion, is also tiny relative to its needs.

Muddling through is the likely outcome for most banks. State support may be extended for longer. Banks with too few deposits will gradually shrink and be unable to participate in juicy new lending opportunities. Unable to transform funding structures, regulators may focus instead on making assets more liquid. European supervisors want banks to have enough cash to survive a month-long freeze of wholesale markets.

Such "war gaming" has a patchy record. Bear Stearns had about \$18 billion of liquid funds prior to its collapse, compared with a funding need of \$60 billion-100 billion. Still, the size of the buffers being built up is staggering. Goldman Sachs now has liquid funds of \$171 billion, equivalent to one-fifth of its assets. Banks in the future will probably have loads more capital and cash, but will still ultimately rely on the state to backstop their funding.

## Funding rules in New Zealand

## Lord of the ratios

Sep 3rd 2009

From The Economist print edition

## New Zealand has hammered out a liquidity policy—but it is not for everyone

REGULATORS have spent decades constructing elaborate rules for bank capital, but prescriptions on how banks should manage liquidity are much thinner on the ground. Enter the Reserve Bank of New Zealand, which has become the first authority to pass hard-and-fast rules for liquidity since the crisis.

Locally incorporated banks will be expected to meet a trio of specific funding ratios within a couple of years. Two “mismatch” ratios are designed to ensure that banks have enough cash and liquid assets readily available if creditors suddenly come calling. The third measure, a “core funding ratio” (CFR), is more novel. At least 75% of banks’ total lending will have to be funded with stickier liabilities such as retail deposits and wholesale borrowing maturing in more than a year. Depositors are less likely to yank their money because it is insured; with luck, any crisis will have passed before longer-term wholesale debts come due.

None of the big New Zealand banks currently meets the new threshold, and because longer-term borrowing is dearer, the central bank expects lending costs to increase by 10-20 basis points. But the policy is not as tough as it seems. The banks’ larger Australian parents can always borrow cheaply in the short-term market in Australia, where no comparable rule exists, and pass on the proceeds in the form of longer-term lending.

A one-size-fits-all rule may also make more sense for New Zealand’s homogenous banks than for other countries. Analysis from Credit Suisse shows that the CFR of Lloyds Banking Group in Britain, for example, hovers at around 60%. Were it to rearrange its liabilities to exceed the 75% CFR, its net interest income would fall by up to £4 billion (\$6.5 billion) a year. It could shrink its balance-sheet to achieve the same effect, but partly state-owned banks are not about to rein in lending. In any case, there is a limit to how far a funding ratio can go. Forcing too much liquidity on banks stifles credit. And in a genuine crisis, central banks will still need to step in.

Alamy



A fresh view on liquidity



## Decoding money-supply data

## Narrow success, broad concerns

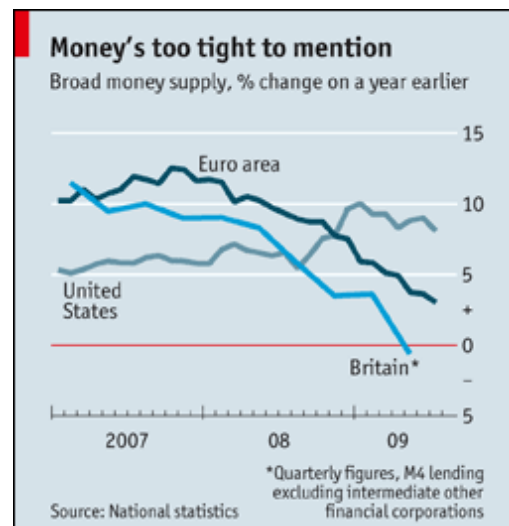
Sep 3rd 2009

From The Economist print edition

## Unorthodox monetary policies have mixed effects on the money supply

"INFLATION is always and everywhere a monetary phenomenon," said Milton Friedman. So when central banks started pursuing unorthodox monetary policies, including the purchase by central banks of government debt, to boost their economies, some commentators started muttering about the possibility of a descent into Weimar-style hyperinflation. Others took a different view. They looked at the repeated attempts by the Bank of Japan to pull its economy out of a deflationary mindset and concluded that other central banks might prove equally impotent.

A look at money-supply data in leading economies provides both sides with ammunition. There has been fairly rapid growth in the most narrow measures of money, those closest to cash. Ideally, there would be a "multiplier" effect as growth in narrow money led to increased lending. But broader measures of money are more sluggish. Growth in these measures and growth in credit are what count for economic activity.



In America, for example, M1, which includes banknotes, current accounts and overnight deposits, grew by 17.4% in the 12 months to July, while M2, which also includes savings accounts, rose by just 8.1% over the same period. The difference between the two was even starker over the past three months. In the euro zone the growth rate of M1 rose to 12.2% in the year to July from 9.4% in June. Yet the growth rate of bank lending to non-financial corporations fell to 1.6% in July, and loans to households were flat year-on-year.

None of this sounds like Zimbabwe. For those kind of eye-popping figures, you have to delve into the minutiae of the data. For example, Britain used to publish a number for M0, a very narrow measure of money supply consisting of notes and coins in circulation plus reserves held by commercial banks at the central bank. Between July 2008 and July 2009, M0 more than doubled. But this is not really a sign that the printing presses have been working overtime. Virtually all the jump is due to an increase in bank reserves, following the decision by the Bank of England in March to implement a policy of creating money to purchase assets, or "quantitative easing" (QE). In the three months to July reserves held at the central bank rose at an annualised rate of 1,968%.

When the Bank of England buys gilts from the private sector as part of its QE programme, it pays for them by crediting the reserves account of the seller's bank. Between April and July reserves jumped by almost £111.3 billion (\$175 billion), the counterpart of the asset purchases made through QE. The European Central Bank (ECB) has not formally adopted a policy of QE but the result has been the same. It offered a huge €442 billion (\$620 billion) one-year loan to banks in June, but they put much of it on deposit at the ECB.

To some, this game of pass-the-parcel is a sign that QE is doomed to failure. "Even before QE began, the system had far more liquidity than banks needed," says Mark Capleton, a strategist at Royal Bank of Scotland. The sharp rise in narrow-money growth has not translated into lending to companies and individuals. Figures released on September 1st showed that British consumers had repaid debt in July for the first time since comparable records began to be kept in 1993.

Yet the absence of such an effect is not proof that QE has failed. First, QE may have been successful in addressing other aspects of the credit crunch, for example by boosting confidence and reducing the high rates being paid in the money markets and on corporate-bond issues. Second, there are likely to be lags between the implementation of the policy and growth in broad money. Banks have to be confident enough

to lend and companies and individuals must want to borrow. The multiplier could yet emerge.

There may be tentative signs that the pace of broad-money growth is accelerating. The measure the Bank of England likes to emphasise is M4 excluding intermediate OFCs (other financial corporations), since they are really part of the banking system. In July this measure grew by an annualised 7.4%. That is within sight of the 10% growth rate that Richard McGuire of the Royal Bank of Canada says would translate into healthy 5% growth in nominal GDP.

But the problem is that nobody is entirely sure how, or indeed whether, QE will work. And as the money-supply data show, it is difficult to judge whether they have so far done too little or too much.



## Buttonwood

**Be thankful they don't take it all**

Sep 3rd 2009

From The Economist print edition

**Governments will need to find new ways of raising tax**

"IF YOU drive a car, I'll tax the street/ If you try to sit, I'll tax your seat." The Beatles may have been joking when they wrote the lyrics of "Taxman", but the authorities could soon be tempted to use some of their ideas.

The credit crunch has revealed as many holes in government finances as the Fab Four found in Blackburn, Lancashire in "A Day in the Life". Some nations, including America and Britain, have lurched into budget deficits of more than 10% of GDP, a scale of shortfall not normally seen in peacetime. That may simply be an indication of the depth of the recession. But it may also be a sign that tax revenues have become more volatile, making it much harder for governments to judge the health of their finances.

Illustration by S. Kambayashi



Instead of storing up surpluses in the fat years so as to cushion their finances in the lean ones, governments were sorely tempted to spend their inflated revenues, in the hope of buying some electoral popularity. A European Commission report published earlier this year concluded that tax-revenue growth was "exceptionally high" in most European Union countries during the period from 2003 to 2007. But even with the money pouring in, Britain actually managed to increase its spending at an even faster rate.

A bust in tax revenues has swiftly followed the boom. What explains such marked volatility? The property cycle is one possibility. Higher property prices boost tax revenues directly, through levies on capital gains or on transactions (such as stamp duty in Britain). They also have an indirect impact via the wealth effect, as consumers increase their spending in response to improvement in their balance-sheets (see [article](#)). Britain and America raise a higher proportion of their revenues from taxes on property than other countries. The commission notes tartly that "revenue windfalls during asset-price boom periods are often misread as durable improvements in the underlying budget position."

Another explanation is that both Britain and America have been highly dependent on the finance industry. In the good years, bumper bank profits inflated both corporation-tax receipts and the income-tax take from bonuses. The credit crunch has slashed the revenue from both.

The banking boom was also partly responsible for the widening wealth and income inequalities in the Anglo-Saxon world. The result has been a narrowing of the tax base. In 1986 the top 1% of Americans were responsible for 25.4% of all income taxes paid; by 2005 their share had risen to 38.4%. Since the pay of these plutocrats is highly variable, a bad year for them means a bad year for the taxman.

Even though bank bonuses are on the rebound this year, the industry is smaller than it was. Unless the system is changed, tax revenues from the financial system may never reclaim the heights they reached earlier this decade.

As countries try to eliminate the shortfall, it is tempting to hope that they will do so purely by cutting waste in public spending. But they won't (and probably can't). So they will find other things to tax.

That task will be made more difficult by the greater mobility of corporations (and high-earning individuals) in the modern world. Competition among EU member nations has forced the top corporate-tax rate down by ten percentage points since the mid-1990s, according to Elga Bartsch of Morgan Stanley. In America, low-tax Nevada is among those trying to lure businesses away from high-tax California (where tax revenues have been extremely volatile).

Competition also explains why governments are unlikely to be tempted by the recent suggestion of "Red

Adair” Turner, the head of Britain’s financial services regulator, to impose a levy on capital-market transactions. It would only work if everyone else, including the Swiss and Singaporeans, did the same. Instead their energies will be focused on closing “loopholes”—witness the recent assault on offshore tax havens. That may result in some one-off windfalls, but not enough to plug the revenue gap.

Because governments are limited in their ability to tax the mobile, they will tax the static. As noted above, property is already highly taxed in Britain and America (and may be years away from another boom). So consumption taxes are the more likely answer. They are hard to avoid and fairly stable, since spending patterns do not change sharply from year to year. But they tend to fall more heavily on the poor than the rich. A crisis created by investment bankers will be paid for by shop assistants and office cleaners.

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[Economist.com/blogs/Buttonwood](http://Economist.com/blogs/Buttonwood)

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**Derivatives contracts in China****Our loss, your problem**

Sep 3rd 2009 | HONG KONG  
From The Economist print edition

**China considers bailing out of costly futures contracts**

GIVEN its vast reserves and seemingly healthy economy, a default by China's government or one of its tentacles should be one of the lesser concerns for international markets. This perception was jolted on August 28th by reports that the State-owned Assets Supervision and Administration Commission (SASAC) might endorse a move by large state-controlled enterprises under its umbrella to break derivatives contracts that were purchased last year from international banks to protect them from rising commodity prices.

Details, inevitably, are fuzzy. There is no official comment; terrified international bankers are silent. But reports in the local press and some elaboration by participants suggest that efforts by the country's large shippers, airlines and power companies to cope with high oil prices by taking out futures contracts produced steep losses as the market reversed and prices fell.

That apparently prompted SASAC to launch an investigation, in part to find out if its wards were engaged in outright speculation, rather than hedging, but also to determine if a bail-out could be arranged. The bluntest remedy would be to break the contracts entirely; another, to force contracts to be rewritten and losses reduced. Either outcome would be costly for the foreign banks, in the short run through lost profits and in the long run because a growing business in derivatives would be badly undermined.

For China, too, the consequences would hurt. Counterparties would presumably charge more in future to offset the risk of being stiffed. There would be legal fallout as well. If the contracts were arranged outside China through subsidiaries in Hong Kong, Singapore or London, which is common, then they were almost certainly done under non-Chinese laws that are unlikely to be sympathetic to deliberate deadbeats. Given the direct ties these companies have to the state, a default could in theory trigger a sovereign credit failure and the legitimate seizure of state-owned assets (though it is a stretch to believe that any bank with interests in China would push a case that far). If the contracts were arranged inside China, the companies might claim to have lacked the authority to have engaged in them, but that would undermine their ability to do business abroad.

One theory is that Beijing is trying to squeeze foreign banks out of the derivatives business. That would accord with rules recently put into effect that restrict the ability of foreign firms to develop derivatives. China, it is said, would like its own banks to gain expertise and, if profits must be made, have them benefit. If so, independent pricing of risk, which is what derivatives are meant to be about, would be the real casualty.

## The wealth effect

## Withdrawal symptoms

Sep 3rd 2009

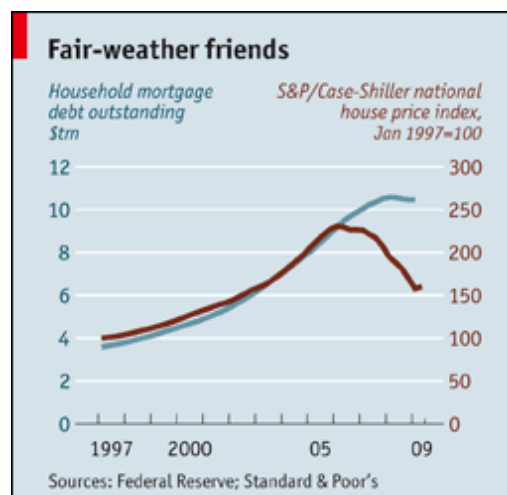
From The Economist print edition

## Most new borrowing during America's housing boom was for spending

HOW big an influence on spending is housing wealth? Hopes for a consumer revival in countries where house prices have slumped rest, in part, on the answer. A purist view is that the value of homes has no "wealth effect" on consumption. An increase in house prices only raises the future cost of shelter. Those about to trade down or sell out receive a windfall, but first-time buyers and those hoping to buy a bigger home are worse off. The overall effect on wealth is a wash. But even if that is correct, house-price increases may still have an impact as they create housing collateral for consumers who could not otherwise borrow. A study\* by Atif Mian and Amir Sufi of the University of Chicago's Booth School of Business pins down the size of this effect, using the credit records of almost 70,000 American borrowers.

It could be that an unseen influence, such as greater optimism about future earnings, pushed up both house prices and debt. So the authors use their granular data to first establish a link between the two, which is apparent in the aggregate figures up to 2006 (see chart). They found that house prices and household debt increased most where the supply of new housing was limited—in places that are hemmed in by hills, rivers or the ocean. But in cities where housing supply is very "elastic"—where homes can easily be built to meet demand and prices did not rise—debt barely rose either. This suggests that house-price rises led to more borrowing.

How much of this was simply down to new buyers needing bigger home loans? By limiting their sample to those who were already homeowners in 1997, before the boom in housing and credit, the authors were able to measure how much of the rise in debt was the result of cashing in on higher home values. They reckon almost 60% of increased debt between 2002 and 2006 came from this source. Put another way, every \$1 increase in home values led to a rise of 25-30 cents in borrowing. That is far bigger than some long-standing estimates of the wealth effect from rising asset values, which are in the 3-5 cent range (though these include the response of renters, too).



Money released from housing equity was not funnelled into other forms of saving. Homeowners in cities where house prices rose quickly were less, rather than more, likely to invest in other properties. Funds raised against rising home equity were not used to pay down other debts. And fewer households invested in financial assets, such as shares and bonds, when house prices were rising. All this suggests that almost all of the \$1.45 trillion the authors estimate was borrowed against rising home equity was used for spending.

Digging deeper into their data, the two Chicago economists discovered that the pattern of home-equity withdrawal was far from uniform. The young were keener to cash out than the old. That is at odds with the life-cycle theory of consumption, which says that the young amass wealth so that they can spend it in old age. Borrowing by the top quartile of homeowners ranked by their creditworthiness scarcely rose in response to rising house prices. That is evidence against a pure wealth effect, says Mr Sufi. The most eager borrowers were those with the lowest credit ratings and whose credit-card borrowing was closest to the agreed limit. That sits well with a model of willing but frustrated consumers given access to credit through the rising value of their homes.

It also fits a more worrying interpretation: that many of the keenest borrowers were myopic or had problems with self-control. More than a third of new defaults in 2006-08 were because of home-equity-based borrowing. Default rates for low credit-quality homeowners rose by more than 12 percentage points in places where housing was scarcest and prices had risen most. In "elastic" cities, by contrast, the

increase was less than four percentage points. This suggests huge over-borrowing. Prospects for a sustained recovery look dim if households that are most inclined to spend are mired in negative equity.

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\* "[House Prices, Home Equity-Based Borrowing, and the US Household Leverage Crisis](#)"

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Gary Gensler, derivatives cop

## A new sheriff

Sep 3rd 2009 | WASHINGTON, DC  
From The Economist print edition

Long marginalised, the CFTC reasserts itself under a new chairman

Bloomberg



**This OTC derivatives market ain't big enough for the both of us**

WHEN Gary Gensler was named late last year to head the Commodity Futures Trading Commission (CFTC), the financial industry may have thought him an ally. After all, he had been a partner at Goldman Sachs and later served under Bill Clinton's famously deregulatory Treasury secretary, Larry Summers. But a book that Mr Gensler coauthored in 2004 might have been a better guide to his predispositions. The cover of *The Great Mutual Fund Trap* shows a faceless banker playing a shell game. Inside, Mr Gensler warns investors that Wall Street is continuously trying to rip them off.

Barack Obama's financial appointees have all tended to be pro-regulation, but few are as enthusiastic as Mr Gensler. In July he proposed limiting the size of positions that many market participants, such as exchange-traded funds, can take in energy futures (contracts to buy or sell commodities at a set price in the future). In August he sent a letter to Congress arguing that Mr Obama's proposal to regulate over-the-counter (OTC) derivatives does not go far enough. "There's a new sheriff in town," says Michael Greenberger, a former CFTC official who is now an academic at the University of Maryland.

The CFTC has long been one of America's smallest and most hands-off financial regulators, overshadowed by the much larger and more prosecutorial Securities and Exchange Commission (SEC), which oversees the cash-securities markets. Its staff shrank under George Bush. Its very existence is an anomaly: it ought to have been merged with the SEC long ago, but its oversight is jealously guarded by Congress's agricultural committees. But thanks to Mr Gensler's muscular style and the financial crisis, its star is now rising.

Two developments in particular have turned the tide. The first is the role OTC credit derivatives played in amplifying the financial crisis. The CFTC's traditional focus has been on exchange-traded futures contracts for agricultural, energy and financial products. But exchanges' share of derivatives has shrunk as that of banks' OTC dealing-rooms has grown. The CFTC tried to claim jurisdiction over OTC markets in 1998, but was sent packing by the banks, Mr Clinton's Treasury department and Alan Greenspan, then the Federal Reserve chairman. In 2000 Congress formally exempted OTC derivatives from the CFTC's oversight, leaving the agency a bystander as credit derivatives exploded in popularity. Ironically Mr Gensler, as an aide to Mr Summers, helped pass that law. Mr Obama has now asked Congress to require most OTC derivatives to be settled through CFTC- or SEC-regulated central clearing-houses, or be subject to SEC or CFTC margin requirements.

The second turning-point for the CFTC was last year's surge in oil prices to over \$140 a barrel, which many in Congress blame on alternative investors such as exchange-traded funds which hold large



commodity positions for extended periods. Whether such speculators were behind the spike in oil prices is a matter of fierce debate. A CFTC study last year appeared to exonerate them. Mr Gensler has not repudiated that study but he does plan to release the underlying data for public examination. Although he thinks commodities experienced an asset bubble, he says his real interest in position limits is to prevent a growing concentration of trading among a few players that could permit speculative swings in prices in the future.

How much influence the CFTC will ultimately obtain is still an open question. Mr Obama's financial reforms would leave the Federal Reserve as the main regulator of the biggest OTC dealers. The CFTC and SEC have to work out their respective responsibilities, the subject of hearings this week. Overhauling finance is not at present the main priority of Congress or Mr Obama. But Mr Gensler is likely to get a hefty boost to his budget and staff. Someone may even get around to posting his picture in the CFTC's lobby, still adorned with that of his Republican predecessor.

## Economics focus

# The incredible shrinking surplus

Sep 3rd 2009

From The Economist print edition

## Is China deliberately understating the size of its trade surplus?

CHINA'S current-account surplus is seen by some as the root cause of the financial crisis. The good news is that after widening year after year it is now shrinking much faster than expected. In the first half of this year the surplus narrowed to \$130 billion, one-third lower than a year earlier, and barely half its level in the second half of 2008. Not only has China's merchandise trade surplus narrowed, but investment income from China's stash of foreign reserves has also dropped. Arthur Kroeber at Dragonomics, an economic-research firm, predicts that the current-account surplus is likely to drop to 5% of China's GDP this year, down from 11% at its peak in 2007. Belatedly, China seems to be doing its bit to rebalance the world economy.

But how accurate are China's figures? In theory China's trade surplus with America should match the deficit that America reports in its trade with China. The government in Beijing claims that its surplus with America fell to \$62 billion in the six months to June. Yet official statistics from Washington, DC, show that America ran a deficit with China of \$103 billion during the same period. There are similar disparities with other trading partners. China's reported surplus with the euro area is only half as big as the number published by European statistical offices. Even more striking is its trade balance with Japan: China says it had a deficit with Japan in the first half of this year, but Japanese data show instead that Japan ran a deficit with China.

China's economic statistics are notoriously dodgy. Components of GDP do not add up; the sum of provincial GDP is always much bigger than the national figure. It would appear that China's trade figures are no better. Moreover, the discrepancy is consistently in one direction: China reports smaller bilateral trade surpluses than those suggested by its trading partners' data. If you add up all countries' trade with China (using the IMF's Direction of Trade Statistics database), then the world ran a trade deficit with China of about \$650 billion in 2008, more than twice as large as the \$295 billion surplus logged by China itself (see chart, left-hand side). That \$350 billion difference was nearly four times as big as the gap ten years earlier. Is China running a large trade deficit with Mars? Or, as conspiracy theorists conclude, is Beijing deliberately understating its embarrassingly large surplus?



In fact there are rather less sinister explanations for much of the discrepancy between China's numbers and those of its trading partners. The most important is that a lot of China's trade is shipped through Hong Kong. It is often difficult for China's statistical agency to track the final destination of such exports, so goods which are exported from China to Hong Kong and then re-exported to America, say, are usually recorded by officials on the mainland as exports to Hong Kong. By contrast, it is easier for customs

officials in importing countries to determine the true country of origin, so America correctly records these same goods as imports from China. Likewise, America's exports to China which go via Hong Kong may be recorded as exports to Hong Kong, while China will count them as imports from America.

Hong Kong re-exporters also add a mark-up of around 25% to goods they handle, which drives a further wedge between the value of China's exports and their import value at their destination. The result is that official statistics overstate the true size of America's and others' deficit with China, while Chinese statistics understate its surplus. If re-exports from Hong Kong are included in China's exports to America, the gap between the trade figures reported by China and by America is reduced by about half (see chart, right-hand side). This still leaves a big shortfall, however, and it does not explain why China's global trade surplus (which includes all trade with Hong Kong) is so much lower than the sum of bilateral trade balances reported by the rest of the world.

## **Balance cheat?**

Another factor is that countries report exports and imports on a "customs" basis. Imports include the cost of insurance and freight but exports are recorded on a "free on board" (FOB) basis, which excludes such charges. An importer will always show the value of goods to be 5-6% more when they arrive than when they left the exporting country. If all shipping costs were excluded from the sums, China's surplus would be bigger but its trading partners' deficits would be smaller. Indeed, China's government does report its trade surplus with imports on an FOB basis as part of its half-yearly balance-of-payments accounts. In 2008 it was \$360 billion, \$65 billion larger than on a customs basis.

A study in 2007 by America's Treasury adjusted China's trade with over 100 countries to include re-exports through Hong Kong and exclude shipping and insurance as well as the mark-up charged by Hong Kong re-exporters. This increased China's trade surplus in 2005 by \$75 billion and reduced the sum of deficits reported by the rest of the world by \$140 billion, so the discrepancy between the two figures fell from over \$300 billion to \$90 billion.

Much of the remaining gap probably reflects disguised capital flows rather than a deliberate ploy by Beijing to understate its trade surplus. In order to dodge capital controls and move money out of China, firms declare exports at less than their true value, or imports at more. Firms also use such wheezes to transfer profits to affiliated firms in low-tax areas, such as Hong Kong. The money then comes back to China as foreign direct investment to take advantage of more favourable tax treatment. Such disguised outflows are unlikely to be increasing, however. If anything, given that China is bouncing back faster than the rest of the world, exporters have more of an incentive to over-invoice exports as a way of bringing foreign money into the country. This suggests that the country's trade surplus is declining as rapidly as it claims.

China's trade surplus—and hence its current-account surplus—is almost certainly bigger than that reported by Beijing, even if it is much smaller than the combined deficits reported by America and other trading partners. But for the rest of the global economy, the crucial thing is not the precise size of China's surplus, but the fact that it is finally shrinking.

## AIDS vaccines

## A fluttering in the breeze

Sep 3rd 2009

From The Economist print edition

**AIDS-vaccine research has been in the doldrums. A project whose first discoveries were announced this week may put the wind back in its sails**

Boris Heger



THE scientific study of AIDS has dropped out of the headlines over the past year or two. The disease is still a mass killer, but the drugs used to combat it have become cheaper, and the mechanisms for getting them to the infected, most of whom live in poor countries (predominantly African ones), have got better. As to prevention, circumcision—though by no means a complete answer—has been shown to reduce a man's risk of becoming infected with HIV, the virus that causes the disease, and thus helps slow down the rate of transmission. The drugs, too, seem to do that, by reducing the number of viruses in an individual's body.

That is all good news. But it brings the field no nearer to what is really needed—a vaccine that will stop people getting infected in the first place. The last big vaccine trial, known as STEP, ended in failure in 2007. It may even have promoted susceptibility to the virus it was trying to curb. AIDS-vaccine researchers seemed to be running out of both ideas and hope. But a paper published in this week's *Science* shows that neither of those things is true. There are still original ideas around. And there is also a revival of hope.

The paper in question has been published by a team led by Laura Walker of the Scripps Research Institute, in San Diego, and Sanjay Phogat of the International AIDS Vaccine Initiative (IAVI), in New York. It confirms that there is a weakness in HIV's armour, and unveils weapons that might be able to exploit it.

The weapons in question are called broadly neutralising antibodies (known as bNAbs in the trade). These are antibodies that deactivate a wide range of HIV strains—which is particularly important for an effective vaccine, because HIV is so variable. Until now, though, those bNAbs which have been identified have not been broad enough. They have been effective only against strains circulating outside Africa. Moreover, no new bNAb has been found for more than a decade.

## Taking the strain

The two new ones reported by Dr Walker and Dr Phogat are the first fruits of a project called Protocol G,

one of several multi-centre investigations into various aspects of AIDS that IAVI is helping to organise. This particular project is looking specifically for bNAbs in volunteers from seven African countries (Côte d'Ivoire, Kenya, Nigeria, Rwanda, South Africa, Uganda and Zambia) and from America, Australia, Britain and Thailand.

The antibodies in question were found by screening blood serum from 1,800 volunteers from these countries. The researchers have zeroed in on antibodies that react with part of the virus called its spike. This consists of two sugar-protein molecules known as gp120 and gp41 that react with a protein called CD4, which is found on the surface of certain cells of the immune system. The reaction grants the virus entry to the cell. That is why HIV infects immune-system cells, rather than other sorts.

With the aid of two biotechnology firms, Monogram Biosciences of South San Francisco and Theraclone Sciences of Seattle, Dr Walker, Dr Phogat and their colleagues tested all their serum samples for anti-HIV activity, picked the top 10%, extracted all the antibodies from each of these samples, tracked down the cells that made each antibody, found the relevant genes, snipped them out, cloned them into other, faster-reproducing cells, made usable samples of pure antibody from each of these clones, and tested the results to see if they could stop HIV from docking with cells that have CD4 on their surfaces. Two such antibodies (both from the same donor and dubbed PG9 and PG16) could.

The next stage is to find out exactly which bits of the spike PG9 and PG16 lock onto. This knowledge is needed to design a chemical that looks enough like the relevant spike element to prompt the immune system to make antibodies that will neutralise it. That chemical might, just, be the basis of a vaccine. And if it is not, everyone involved hopes that Protocol G will soon throw up more bNAbs, and that they will help refine the search for HIV's weak spot. For unless it turns out to have one, the search for a vaccine could go on for ever.

## The origin of diabetes

## Don't blame your genes

Sep 3rd 2009

From The Economist print edition

They may simply be getting bad instructions—from you

Magnum Photos



Piling on the methyl groups

GENES are acquired at conception and carried to the grave. But the same gene can be expressed differently in different people—or at different times during an individual's life. The differences are the result of what are known as epigenetic marks, chemicals such as methyl groups that are sometimes attached to a gene to tell it to turn out more of a vital protein, or to stop making that protein altogether.

Many researchers believe epigenetic marks hold the key to understanding, and eventually preventing, a number of diseases—and one whose epigenetic origins they are particularly interested in is type 2, or late-onset, diabetes. Juleen Zierath and her colleagues at the Karolinska Institute in Stockholm, Sweden, are trying to find out how people develop insulin resistance, the underlying cause of type 2 diabetes.

Insulin is a hormone produced by the pancreas. When all is going well, it lets cells know when they need to mop up glucose from the blood, usually just after a person has eaten. If the hormone is absent or is produced in insufficient quantities because of damage to the pancreatic cells that secrete it, the result is classical (or type 1) diabetes. But people with insulin resistance—and thus the late-onset version of the disease—do produce insulin. Their problem is that their glucose-absorbing cells cannot heed its advice. The sugar stays in their bloodstreams, where it damages the vessels, leading to ailments such as heart disease, kidney failure and blindness.

As they report in *Cell Metabolism*, Dr Zierath and her team decided to look at one of the main consumers of glucose: muscle tissue. They took muscle biopsies from 17 healthy people, 17 people with type 2 diabetes and eight people with early signs of insulin resistance, so-called "pre-diabetics". They then compared the patterns of the methyl groups attached to the genes of the healthy volunteers with those of the diabetic and pre-diabetic ones.

As it turned out, they found hundreds of genes in which the patterns differed systematically, so to whittle the problem down they concentrated on those involved in the function of the mitochondria. These are the components of a cell that extract energy from glucose and use it to manufacture a chemical called ATP, which is the universal fuel of biological processes. Having fewer or less effective mitochondria causes a drop in demand for glucose, and might thus cause a cell to become insulin resistant.

Even narrowing the question down like this, though, left 44 genes to look at. Of these, Dr Zierath and her team picked one called PGC-1 alpha for further study. This gene is involved in the development of mitochondria, and the extra epigenetic marks the researchers found on it in diabetics and pre-diabetics had the effect of instructing the cells the marked genes were located in to produce fewer and smaller mitochondria than is normal.



The next question was how those marks got there. It is well known that poor diet and lack of exercise make insulin resistance more likely, so one hypothesis is that these things change the epigenetic marks on genes such as PGC-1 alpha. To test that idea, the researchers bathed cells in glucose and fats (chosen as surrogates for bad diet and lack of exercise for obvious reasons) and also in inflammation-producing proteins called cytokines. These proteins, they knew, are produced abundantly in the obese. And obesity, the consequence of bad diet and lack of exercise, is another risk factor for type 2 diabetes. Lo and behold, doses of both fats and cytokines caused PGC-1 alpha to be methylated.

Next, Dr Zierath wanted to know if she could prevent that. So, this time, before bathing the healthy cells in fats or cytokines, the team added a chemical that blocks the activity of DNMT3B, an enzyme which they found methylates PGC-1 alpha. When that was done, no extra methyl groups appeared.

These findings have two interesting implications. First, the fact the team was able to stop PGC-1 alpha being methylated suggests that a drug might be developed to do the same. Second, they show that bodily abuse can stretch all the way down to the genetic level. As Dr Zierath puts it, "we are not victims of our genes. If anything, our genes are victims of us."

**Education, psychology and technology****Games lessons**

Sep 3rd 2009 | NEW YORK  
From The Economist print edition

**It sounds like a cop-out, but the future of schooling may lie with video games**

SINCE the beginning of mass education, schools have relied on what is known in educational circles as “chalk and talk”. Chalk and blackboard may sometimes be replaced by felt-tip pens and a whiteboard, and electronics in the form of computers may sometimes be bolted on, but the idea of a pedagogue leading his pupils more or less willingly through a day based on periods of study of recognisable academic disciplines, such as mathematics, physics, history, geography and whatever the local language happens to be, has rarely been abandoned.

Abandoning it, though, is what Katie Salen hopes to do. Ms Salen is a games designer and a professor of design and technology at Parsons The New School for Design, in New York. She is also the moving spirit behind Quest to Learn, a new, taxpayer-funded school in that city which is about to open its doors to pupils who will never suffer the indignity of snoring through double French but will, rather, spend their entire days playing games.

Quest to Learn draws on many roots. One is the research of James Gee of the University of Wisconsin. In 2003 Dr Gee published a book called “What Video Games Have to Teach Us About Learning and Literacy”, in which he argued that playing such games helps people develop a sense of identity, grasp meaning, learn to follow commands and even pick role models. Another is the MacArthur Foundation’s digital media and learning initiative, which began in 2006 and which has acted as a test-bed for some of Ms Salen’s ideas about educational-games design. A third is the success of the Bank Street School for Children, an independent primary school in New York that practises what its parent, the nearby Bank Street College of Education, preaches in the way of interdisciplinary teaching methods and the encouragement of pupil collaboration.

Ms Salen is, in effect, seeking to mechanise Bank Street’s methods by transferring much of the pedagogic effort from the teachers themselves (who will now act in an advisory role) to a set of video games that she and her colleagues have devised. Instead of chalk and talk, children learn by doing—and do so in a way that tears up the usual subject-based curriculum altogether.

Periods of maths, science, history and so on are no more. Quest to Learn’s school day will, rather, be divided into four 90-minute blocks devoted to the study of “domains”. Such domains include Codeworlds (a combination of mathematics and English), Being, Space and Place (English and social studies), The Way Things Work (maths and science) and Sports for the Mind (game design and digital literacy). Each domain concludes with a two-week examination called a “Boss Level”—a common phrase in video-game parlance.

**Freeing the helots**

In one of the units of Being, Space and Place, for example, pupils take on the role of an ancient Spartan who has to assess Athenian strengths and recommend a course of action. In doing so, they learn bits of history, geography and public policy. In a unit of The Way Things Work, they try to inhabit the minds of scientists devising a pathway for a beam of light to reach a target. This lesson touches on maths, optics—and, the organisers hope, creative thinking and teamwork. Another Way-Things-Work unit asks pupils to imagine they are pyramid-builders in ancient Egypt. This means learning about maths and engineering, and something about the country’s religion and geography.

Whether things will work the way Ms Salen hopes will, itself, take a few years to find out. The school plans to admit pupils at the age of 12 and keep them until they are 18, so the first batch will not leave until 2016. If it fails, traditionalists will no doubt scoff at the idea that teaching through playing games was ever seriously entertained. If it succeeds, though, it will provide a model that could make chalk and talk redundant. And it will have shown that in education, as in other fields of activity, it is not enough just to apply new technologies to existing processes—for maximum effect you have to apply them in new and imaginative ways.

## Antibiotics

## A spineless solution

Sep 3rd 2009

From The Economist print edition

## A better way to find novel antibiotics

NEW antibiotics are always welcome. Natural selection means the existing ones are in constant danger that pathogens will evolve resistance to them. But winnowing the few chemicals that have antibiotic effects from the myriad that might do, but don't, is tedious. So a technique invented recently by Frederick Ausubel of Harvard University and his colleagues, which should help to speed things up, is welcome.

Dr Ausubel's method, the details of which have just been published in *ACS Chemical Biology*, employs nematode worms of a species called *C. elegans* as its sacrificial victims. *C. elegans* is one of the most intensively studied animals on Earth (it was the first to have its genome read completely). It is a mere millimetre long, and can be mass produced to order, so it is ideal for this sort of work.

Dr Ausubel set out to make an automated system that could infect worms with bacteria, treat them with chemical compounds that might have antibiotic effects, and then record the results. The device he has built starts by laying the worms on a "lawn" of pathogenic bacteria for 15 hours and then mixing them with water to create a sort of worm soup. It then places the infected worms into individual enclosures, using a machine called a particle sorter that is able to drop a precise number of worms (in this case 15) into each of 384 tiny wells arrayed on a single plate. These wells have, in turn, each been pre-loaded with a different chemical that is being tested for possible antibiotic properties. Once in place, the worms are left alone for five days.

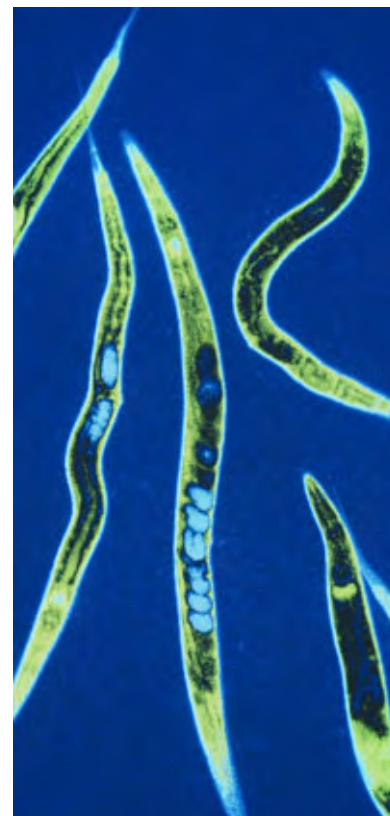
Until now, researchers engaging in this sort of work have had to monitor each wellful of worms by eye (assisted by a microscope) to determine whether the inmates were alive or dead. To avoid this time-consuming process, Dr Ausubel and his team exposed their worms to an orange stain once the five days were over. The stain in question enters dead cells easily, but cannot enter living ones. They were thus able to distinguish the quick from the dead by colour, rather than propensity to wriggle.

Moreover, using a stain in this way meant they could automate the process by attaching a camera to the microscope, taking photographs of all 384 wells, and feeding the images into a computer that had been programmed to measure the area of orange in a well and contrast that with the total area occupied by worms. When they compared this automated mechanism for identifying dead worms with manual methods that depended upon human eyes, they found it was every bit as effective.

So far Dr Ausubel and his colleagues have managed to test around 37,000 compounds using their new method, and they have found 28 that have antibiotic properties. Their most exciting discovery is that some of these substances work in completely different ways from existing antibiotics. That means entirely new types of resistance mechanism would have to evolve in order for bacteria to escape their effects.

Mass screening of this sort is not, itself, a new idea in the search for drugs, but extending it so that it can study effects on entire animals rather than just isolated cells should make it even more productive. And worms, unlike, say, white mice, have few sentimental supporters in the outside world.

Science Photo Library



Wriggle for the camera, please

**Correction: Folic acid**

Sep 3rd 2009

From The Economist print edition

In "On the Pill" (August 29th) we attribute the work on folic acid which the article describes to Steven Bailey and Bruce Ames. Dr Ames edited the scientific paper in which the original study was published, but he was not directly involved in the research. Dr Bailey's actual colleague was June Ayling who is, like him, a member of the University of South Alabama. Apologies to all involved.

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## The evidence for evolution

## It's all there

Sep 3rd 2009

From The Economist print edition

How humans are related to chimpanzees—and to cheese mites and cherry trees too

Illustration by Daniel Pudles



**The Greatest Show on Earth: The Evidence for Evolution.** By Richard Dawkins. *Simon and Schuster*; 480 pages; \$30. *Bantam Press*; £20. Buy from [Amazon.com](http://Amazon.com), [Amazon.co.uk](http://Amazon.co.uk)

A SCIENTIST on a flight across America falls into conversation with his neighbour, who turns out to be gratifyingly interested in his research on wild guppy populations in Trinidad. He probes deeply the scientist's methods, his findings and setbacks. Then comes the big question: what is the theory underlying the work? Darwin's theory of evolution by natural selection, replies the scientist. The rest of the journey passes in chilly silence.

This anecdote was related by the biologist in question to Richard Dawkins, one of the ablest and certainly the most high-profile of the many scientists trying to dispel the belief that man, rather than descending from other animals, was created in his current form by some divinity. In his previous books the British biologist has presented new ways of looking at evolution, demolished barriers to understanding it and traced the family tree of all life back through its branching points to a single origin. These books all started with evolution. But in the bicentennial year of Darwin's birth Mr Dawkins fills a gap in his oeuvre by setting out the evidence that the "theory" of evolution is a fact—"as incontrovertible a fact as any in science".

And what a lot of evidence there is. The fossil record, far from the tenuous succession of gaps described by creationists, provides an admittedly incomplete but beautiful and coherent set of clues to life in the distant past. That any traces at all remain from so long ago is astounding, and anyway it is not the completeness of the fossil record but its consistency that matters. When asked what observation would disprove the theory of evolution, J.B.S. Haldane, a pioneering British geneticist, replied: "Fossil rabbits in the Precambrian era." But such anachronisms have never been found.

Then there is the evidence written on the bodies of all living things. The mammalian skeleton is consistently recognisable in creatures as various as bats, monkeys, horses and humans. Vestiges such as the stumpy wings of flightless birds, and the hairs that prickle on human skin just like the rising hackles on furry mammals, are further testimony to our shared origins. Glitches, like the laryngeal nerves that are

so neatly laid out in fish but that must detour in animals with necks—by a crazy 15 feet (4.6m) in the case of giraffes—demonstrate the incremental, undirected business of evolution in touching detail. At the microscopic scale, molecular genetics connects the various parts of the grand family tree with fantastic detail and accuracy.

The evidence that Mr Dawkins sets out so persuasively here is already widely known. Yet two-fifths of Americans still refuse to accept that human beings share a common ancestry with animals, preferring to believe that they were created in their present form in the past 10,000 years.

Perhaps some evolution-deniers will read this book and be convinced. But even to pick it up they would have to ignore a determined campaign of misinformation: polemicists demanding that schools “teach the controversy” (there is none); books about “intelligent design” written by “creationist scientists” (a ragbag of nonentities, mostly engineers or chemists rather than biologists); untruths and ad hominem attacks (few [scientists] “accept that an amoeba can evolve into a human being, even one as flawed as Richard Dawkins,” wrote one Christian essayist recently, neatly combining both genres).

Those who do read it will find that among the many puzzles that evolution explains so well are the futility and suffering that are ubiquitous in the natural world. All trees would benefit from sticking to a pact to stay small, but natural selection drives them ever upward in search of the light that their competitors also seek. Surely an intelligent designer would have put the rainforest canopy somewhat lower, and saved on tree trunks? The cheetah is perfectly honed to hunt gazelles—but the gazelle is equally well equipped to escape cheetahs. So whose side is the designer on?

The ichneumon wasp paralyses its prey without killing it and lays its larva inside this convenient source of fresh meat, to eat it slowly alive. This is just one striking instance of the immensity of pain in the animal kingdom, which defies explanation except via the unyielding calculus of competitive survival.



## The evolution of empathy

### Less brutish, still short

Sep 3rd 2009

From The Economist print edition

**The Age of Empathy: Nature's Lessons for a Kinder Society.** By Frans de Waal. *Crown*; 304 pages; \$25.99 and £19.99. Buy from [Amazon.com](http://Amazon.com), [Amazon.co.uk](http://Amazon.co.uk)

EVERY day the world seems more like Aesop's "Fables". Rooks are found to use ingenious tools; dolphins are overheard talking to whales; and pigs, while not yet flying, play a passable game of football—at least according to the BBC. As for apes, they would hardly make headlines any more if they were found to be adept at composing limericks.

Frans de Waal, a primatologist in the psychology department of Emory University in Atlanta, Georgia, is perhaps best known for his studies of bonobos—the so-called "politically correct" apes who are somewhat feminist, often resolve disputes by making love instead of war, and with whom humans share as much of their DNA as they do with chimpanzees. His new book, "The Age of Empathy", looks at altruism and sympathetic fellow-feeling in both humans and other animals.

His title has a double-meaning: empathy is both very old and freshly topical. It is as ancient as the entire mammalian line, he argues, engaging areas of the brain that developed in our distant ancestors over 100m years ago. And we are also entering a new age of empathy, he thinks, brought on by the financial crisis (the product of a selfishly oriented system), and marked by America's election of President Barack Obama, who has re-emphasised the importance of compassion and helping one's neighbour.

The book is a polemic, and its main target is what Mr de Waal takes to be a distorted idea of human life as relentlessly selfish and ruthlessly competitive. As an antidote to this picture, he offers plenty of evidence of apparently selfless sacrifice, unforced sympathy, co-operation and even a keen sense of fairness in our closest animal relatives, who evolved to reap the benefits of mutual aid. In other words, his answer to Thomas Hobbes's famously gloomy statement that man's existence tends to be "nasty, brutish and short" is, in effect, that it is unfair to brutes. Beasts are not actually all that beastly, and so we need not be either. Nature does not force us to be selfish.

But what exactly is the moral relevance of empathy and altruism in non-human animals? Ethicists have a name for the confused idea that moral conclusions can be deduced from scientific evidence: they call it the "naturalistic fallacy", and it cuts two ways. If it is a mistake to justify human selfishness on the basis of the alleged selfishness of nature (as one strain of "Social Darwinism" tried to do in the late 19th and early 20th centuries, and some right-wing columnists do now), then it is equally mistaken to espouse altruism merely on the basis that chimps can be assiduous at sharing food and at being good buddies to one another.

On the whole, it appears that Mr de Waal appreciates this point. "The Age of Empathy" is best seen as a corrective to the idea that all animals—human and otherwise—are selfish and unfeeling to the core. It offers not only plenty of examples to the contrary, but also some hints as to how and why empathy evolved, and how it might be related to self-awareness. In the case of humans, one might think that it is hardly necessary to get the professional opinion of a zoologist on the matter. Don't we already know that people can be rather good at co-operating, and are not always mercilessly hostile towards their rivals? Yet Mr de Waal does manage to spring some pleasing and intriguing surprises on this score: how many people are aware, for example, that most soldiers are unwilling to fire at the enemy, even in battle? On the other hand, politics can be a much bloodier battleground than war, as any advocate of a "kinder society" soon finds out.

## Globalisation

## The value of history

Sep 3rd 2009

From The Economist print edition

**The Creation and Destruction of Value: The Globalisation Cycle.** By Harold James. *Harvard University Press*; 336 pages; \$19.95 and £14.95. Buy from [Amazon.com](http://Amazon.com), [Amazon.co.uk](http://Amazon.co.uk)

THE reflections of Harold James, an economic historian at Princeton University and a long-time student of what makes globalisation happen, would be of interest even in times more tranquil than these. But at a moment when the march of global integration has been stalled by a financial crisis unparalleled since the 1930s, Mr James is a particularly fitting guide. His previous book about globalisation, in 2001, was about the fragility and reversibility of a process that many at the time believed to be inexorable.

It is to the present crisis, and the profound anxiety that accompanies it, that Mr James turns in his new book. At a time when economists are accused of having forgotten history, yet few historians can explain the world of bank bail-outs and the turmoil they cause, Mr James has a rare gift for being able to marshal an impressive knowledge of economic and financial history in order to highlight previously unrecognised connections with the past.

Financial crises are marked by a disquieting uncertainty about the value of assets and money, which makes them deeply disorientating. It is natural for people to turn to history to try to make sense of things. During the present crisis, arguments about what needs to be done have been framed in terms of the Great Depression. An expert on the era runs the Federal Reserve; another chairs America's Council of Economic Advisers. But Mr James shows that people have always turned to past events in times of crisis. The aftermath of the crash of 1929 was marked by an obsessive interest in earlier crashes, which perhaps explains the widespread use of the phrase "Black Friday" (only the stockmarket collapse of 1869 took place on a Friday).

Mr James argues that the events most closely related to the present crisis may be the huge bank failures in Austria and Germany in 1931. Certainly the story he tells has a familiar ring to it. Uncertainty about asset values in a big German bank led to difficulties throughout the banking sector. The government responded by injecting huge amounts of public money into the banks and by creating a "bad bank" for the assets that could not be priced. The government also founded a new institution that allowed the Reichsbank to discount bills from those banks that could not be traded because the inter-bank market had seized up. Then, as now, the politics of bank bail-outs were devilishly complicated and hugely controversial, forcing politicians to muddy their hands with microeconomic decisions that had enormous consequences and opportunities for cronyism. Mr James is in his element when showing how seemingly novel crises and policy debates are often variants of crises past, especially once the Great Depression is seen as more than a mainly American event.

But he also makes a broader argument. Financial crises revolve around uncertainty in monetary value and they tend to provoke a reconsideration of values in a more fundamental sense. At the moment everything from the ethics of debt and the nature of capitalism to the continued dominance of the dollar is up for debate. Past crises, Mr James argues, show that this ferment can lead to changes in political power. The Great Depression, for example, accelerated the decline of Britain and the rise of America. The world that emerges from this recession will be shaped largely by China and America, the one rising and the other declining as a global power.

But how much of a crisis of values is this in China or India or the rest of the emerging world? Government stimulus, inherent dynamism and favourable demographics have helped many countries grow at a robust pace through this recession. The West's values (re-examined or otherwise) will not by themselves



Corbis

It's happened before

determine the nature of the world that emerges. That the debate about values at the core of Mr James's otherwise wide-ranging book is essentially a Western one thus remains one of its ultimate frustrations.

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## The Islamic veil

## Out from under

Sep 3rd 2009

From The Economist print edition

**Questioning the Veil: Open Letters to Muslim Women.** By Marnia Lazreg. *Princeton University Press*; 184 pages; \$22.95 and £15.95. Buy from [Amazon.com](http://Amazon.com), [Amazon.co.uk](http://Amazon.co.uk)

LONG or short, sternly pinned or silkily draped, the Islamic veil is the most contentious religious symbol today, in the West as much as in the Muslim world. President Barack Obama argues that Western countries should not dictate what Muslim women should wear. France's President Nicolas Sarkozy, by contrast, recently declared that the burqa, the all-over Islamic covering, is "not welcome on French soil". France's parliament is now considering a ban on wearing the burqa in public.

Marnia Lazreg, an Algerian-born professor of sociology at the City University of New York, feels passionately that Muslim women should not wear the veil, as both her mother and grandmother obediently did. She is particularly bothered by the trend of "reveiling" in the West and Islamic countries, whereby the daughters of women who went unveiled decide to cover up. But she also thinks that democratic governments should not impose dress codes by law. So she has written this collection of letters to Muslim women to try to coax them out from under the veil.

Although uneven and with a rather weak grasp of French secularism, the book has great merit. It takes seriously the arguments advanced by defenders of the veil, female as well as male. Such views are various: that it is a form of modesty imposed by the Koran and an expression of piety; that it offers protection from sexual objectification and harassment in a loose, consumerist society; that it is a political statement and reassertion of Islam; that it is a badge of pride in an Islamophobic world. One by one, the author picks apart and punctures each argument, exposing hypocrisy and contradiction, and drawing on case studies of veiled women she has interviewed.

On the question of modesty, for instance, Ms Lazreg points out that the Koran can be read in different ways. Women are variously told to "draw their *veils* over their bosoms and not to reveal their adornment save to their own husbands", or to "cover their bosoms with their *veils* and not show their *finery*" or to "draw their *shawls* over the *cleavages* in their clothes". Do adornment or finery really mean the hair and face? Why is a head-covering, especially when worn with elaborate make-up, more "modest" than decorous modern dress?

The author is impatient with academic feminists on Western campuses who argue that the veil is a form of empowerment for Muslim women, and who dismiss charges of sexual oppression as elitist, Western concepts. Such an apology, writes Ms Lazreg, "makes good conversation", but it is simplistic and dangerous.

Muslim intellectuals, particularly men, exploit such arguments to justify "reveiling" educated young girls who are confused about their identity. Attempts to present the veil as a tool of empowerment, she writes, "rest on a dubious post-modernist conception of power according to which whatever a woman undertakes to do is liberating as long as she thinks that she is engaged in some form of 'resistance' or self-assertion, no matter how misguided." With her letters Ms Lazreg offers a useful and timely counterpoint.

## A surgeon's life

## Death and sex

Sep 3rd 2009

From The Economist print edition

**Direct Red: A Surgeon's View of her Life or Death Profession.** By Gabriel Weston. *HarperCollins*; 205 pages; \$22.99. *Jonathan Cape*; £16.99. Buy from [Amazon.com](http://Amazon.com), [Amazon.co.uk](http://Amazon.co.uk)

THE practice of medicine is a way of living: vivid and engrossing, it stimulates senses physical and metaphysical. Surgery is a love-affair with boldness and precision. It is a rare skill for a doctor to be able to communicate this rich sensorium in writing. It is a delight to read the words of one who does it so well.

Gabriel Weston is an ear, nose and throat specialist living in London. In her introduction to "Direct Red", published in Britain earlier this year and recently released in America, she candidly warns that the events she recounts are a mixture of things that happened and things that might have; the result, she hopes, is "entirely authentic, if not entirely true".

In her first week at medical school she collects the box of human bones she will need for her anatomy studies, taking it to the pub so she can boast to everyone that she is a real trainee doctor. There she meets her first dead person, stretched out on the carpet. Having no idea what to do, she waits for the ambulance, accompanies it to accident and emergency and then goes back to the pub after futile efforts at resuscitation. A good lesson in hubris.

The rigour of surgical training comes as a relief. It takes years for her to realise what she has learned. A fit young man is admitted with vague symptoms. A scan reveals, shockingly, that he has advanced cancer. At surgery his tumour proves inoperable. Dr Weston visits him nightly through the week it takes him to die, not knowing what to say, mortified by her uselessness as a doctor and companion. "I think this sense of my own smallness is the best I have had to offer at this and many subsequent deathbeds."

Alongside death is sex, and perhaps the great surprise of the book is how her experience of medical life is so strongly sexualised. Physical intimacy with patients occasionally verges on something closer than that with a lover. A conversation with a handsome surgeon, in which he instructs Dr Weston how to pass a catheter into an elderly man, conjures up fantasies about her colleague that make her blush. There is much analysis of the sexual dynamics she identifies between doctors, the subservience to seniors, the politics of rank and gender, the way "power and sex ...[get] in the way of clear and useful clinical discourse."

This and much more is tolerated in her drive to be a surgeon: the attrition of hospital shift-work, with its unsociable hours and the endless suffering coming through the doors; the pressure to succeed that makes one choose to please one's consultant above making the best choice for the patient.

It takes a simple encounter with a child in pain for Dr Weston to realise how much she misses her own child. When she finally quits full-time operating, the true decisiveness she shows is that of choosing life over surgery.

Getty Images



**Skilled with a pen, too**

William Golding

## Not a one-trick pony

Sep 3rd 2009

From The Economist print edition

Getty Images



Dreaming of conch shells

**William Golding: The Man Who Wrote "Lord of the Flies".** By John Carey. *Faber and Faber*; 573 pages; £25. Buy from [Amazon.co.uk](http://Amazon.co.uk)

A READER once complimented William Golding on his book, "The Lord of the Rings"—a cruel twist for a man who is famous for just one book. The title of John Carey's biography acknowledges the problem that dogged Golding ever after the success of his 1954 novel, "Lord of the Flies". But this first authorised biography confirms Golding as a writer of range and power who deserves far wider recognition. Reading it has sent this reviewer back to "Pincher Martin", "The Inheritors" and his other books with a sense of revelation.

Golding's novels gain enormously from an understanding of his life. Their bare mythic quality, their dreamlike intensity, their bleak understanding of cruelty and humiliation, even their famous misogyny—all these things have their origins there. Mr Carey has had access to the family's huge archive of previously unseen manuscripts (several of them outright masterpieces, he thinks) as well as stories, notes, poems, drafts and above all a 5,000-page journal that Golding kept every day for 22 years.

Born in Cornwall in 1911, Golding was raised in Marlborough, Wiltshire. His father, the son of a bootmaker, taught science at the local grammar school. Marlborough exemplified England's class system, for it lay in the shadow of Marlborough College, one of the nation's great public schools, a preserve of tradition and privilege. Golding himself attended the grammar school, and the social humiliation he felt as a child—reinforced later at Oxford University, where he read science—was "as real as a wound".

The boy was morbidly sensitive, with a hallucinatory imagination. The dark old Marlborough house backing on to a graveyard was a source of terror, particularly the cellar, which haunted his dreams all his life. This feeling for the unseen set him apart from his parents' rational, atheist, progressive outlook. He loved them, especially his father, a gifted and creative man. But their scepticism shrivelled him, as did their chilly inhibitions. By the time he was six, any budding friendships with the little girls at his dancing class were promptly nipped. Golding could remember his father touching him only twice in his life.

No wonder he developed odd notions about women (poor, soft, cleft creatures) or that he grew inward and self-examining. Understanding his "muddy mind", as he once called it, became a guiding principle, his job as a writer. The schoolboys he taught before and after the second world war, and the war itself, cast a blight on his view of humanity. But he firmly believed that "Lord of the Flies" grew out of the knowledge of his own cruelty: "I have always understood the Nazis", he wrote, "because I am of that sort by nature."

Mr Carey's biography doesn't mince matters. Golding had a bullying streak and he drank too much. But he



was always remorseful, genuinely modest and witty at his own expense. He had many friends and vivid passions: for music, sailing and chess, for ancient Greek and Greece, for composing Latin verse and raising orchids. He knew about ecology before most people, and his friend James Lovelock adopted the goddess Gaia at his suggestion.

But writing was the thing, and Mr Carey's discussion of the novels and of the process of their creation is one of the most interesting parts of the book. Fear, he believes, was Golding's sharpest emotion, the fear of writing itself being one of the worst. His books emerged painfully through many revisions, each draft being a way of postponing the final one. His tactful, patient, encouraging editor at Faber, Charles Monteith, was a lifeline to him, a friend on whom he relied more than any other during the second half of his life.

Later chapters sag, perhaps unavoidably, under the weight of Golding's gathering fame and honours—the Booker, the Nobel. Mr Carey might have cut down on the itineraries and schedules and dinners. And what of Ann, Golding's brilliant and beautiful wife? She is glimpsed in flashes, a remark, an insight, an indispensable presence on too many reading tours, increasingly ill. Yet Golding needed her as desperately as he needed Monteith. Mr Carey ends the book with a quote from Golding's journal, a wry and moving tribute to Ann for everything she has meant to him, from bed to books. "I would never have been as happy in the one with someone else, nor have written the other with someone else—or indeed written anything."

## Stanley Robertson

Sep 3rd 2009

From The Economist print edition

**Stanley Robertson, the last of Scotland's Traveller storytellers, died on August 2nd, aged 69**

Derek Ironside



THE fish-hooses of old Aberdeen were dark, reeking places, and the work was scabby. But it was all Stanley Robertson could get. At 15 he started, 48 hours a week chopping up fish in some poky hole, getting shocks from the finning machine, steeping his skinned, sore hands in brine or pickle-juice. The smell was so scunnering it made him want to puke up, and the lassies on the next bench thought it a great joke to throw fish eyes in his face. When he finally caught the bus home to his dinner, still with his wellies on, croaked after hauling wooden boxes of haddock or hanging kipper kilns in the roof, other passengers would say "What a horrible smell of fish!" and change their seats.

But they were characters who worked there. An old woman in a shawl, who would bandage anyone's stinging fingers; a lad who did Elvis impressions; the foul-mouthed fish-wives, who treated each other like cat's dirt whenever one was out of earshot. And, not least, Stanley himself.

Mr Robertson spent 47 years filleting fish for a living. With his bland face and steady ways, he might have tried to sell you insurance. Out of his apron he wore a suit and a flat cap, always neat. He could slice a lemon sole to perfection. But inside his head, in thousands of tales and ballads handed down for five centuries, lived kings, witches, demons and mermaids. There were knights riding to battle, lovelorn maidens combing their long hair, ghosts shouting "Boo!" from their coffins, giants thrashing with huge clubs through the woods and nimble, virtuous Jack, preparing to outwit them all. Under Mr Robertson's modest cover was the best storyteller in Scotland.

He was a Traveller, one of that mysterious band who were neither true Romanies, nor settled citizens, but roamed the roads of north-eastern Scotland in tents and carts. That meant he was despised as a "tinkie" at school and sometimes cut dead in the fish-hoose, though the girls also pestered him to tell their fortunes (he made them up) and to "read rubbish tae them aboot their tea cups". Since 1945 or so his family, weary of a life of gathering flax or hawking rabbit skins, had settled, with their 13 children, in an Aberdeen tenement. But a time would still come every year when Mr Robertson knew in his bones that it was time to go away:

I'll tak' ye on the road again

When yellow's on the broom.

They would go up the Old Road at Lumphanan, a green drove road peopled with spirits and with a venerable oak tree, Auld Craobhie, who had to be greeted each time they passed. ("We ca' them the guid folk," Mr Robertson said, "for they can dee ye an awful lot of damage.") There they would camp, light a "glimmer", or a fire, sing songs and tell stories, with each teller throwing on a piece of peat as they began. Here five-year-old Stanley first heard the grim and grisly song of the little dove, the "wee doo":

Me Mammy kilt me; me daddie et me;  
Me sister Mary picket ma banes,  
And buried me 'neath twa marble stanes;  
And I grew and I grew into a bonny wee doo.

The language was a mixture of Scots, Doric, Gaelic and Cant, or Traveller dialect; he called it "one ancient tongue", and passed it on as a kindness, not for money. The ballads came from his cousin Lizzie, his grandparents and an aunt, Jeannie Robertson, a singer whose least phrase could "pit shivers down yer spine". As he could.

## The dancing trees

From his Aunt Maggie he learned to pass "through the eye of the skull" into a zone where fairies and warlocks were real, and even scaldies, or non-Travellers, could believe. Mother Nature taught him much of the rest. Favourite among his Jack tales (told at Harvard and the Smithsonian, as well as all over the Grampians) was one where, at the 50-year solstice, all the trees of the Old Road danced. As they pulled up their roots, piles of jewels and treasure were uncovered. Canny Jack picked up a few sparkling pieces; but the Laird of the Black Airt stuffed his pockets, and was crushed by the trees as they returned.

His performances, always in his cap, arms pumping with enthusiasm or voice sinking to a solemn whisper, were for adults or children; the morals of his stories were ageless, and age-indifferent. But his special feel for disappearing worlds and words led him also to collect playground songs, for rope-skipping, ball-throwing, clapping or simply choosing:

Eenie meenie macka racka  
Rair roe dominacka,  
Soominacka noominacka,  
Rum tum scum scoosh!

It was hard to believe, though it was true, that the fish-hoose in which he earned his crust was equally endangered. Late in his life, to his huge surprise, he was made a master of Aberdeen University for keeping old traditions alive. Alongside his tales of the road, of ghoulies and elves and the Laird o' Drum, riding out to see "a weel-faur'd maid/A'shearin' her father's barley", the scholars also recorded his memories of kippers hoisted on tinter-sticks, fish baskets swirled in water, one herring every second dropped into the splitting machine—all that his busy, careful hands were doing, while his head was in Fairyland.

## Overview

Sep 3rd 2009

From The Economist print edition

**American manufacturing** expanded in August for the first time in 19 months, according to the Institute for Supply Management. Its main indicator rose by four points, to 52.9, the first time since January 2008 it has been above the reading of 50 that separates rising from falling activity. New orders for factory goods rose by 1.3% in July. The National Association of Realtors' index of pending home sales rose by 3.2% in July and was 12% higher than a year earlier. Americans' personal incomes were flat in July, but their consumption rose by 0.2%.

**Australia's** GDP rose by 0.6% in the three months to the end of June, thanks to strong exports and resilient consumption at home. The increase left GDP 0.6% higher than in the second quarter of 2008.

Consumer prices in the **euro area** fell by 0.2% in the year to August, according to a provisional estimate. The euro zone's GDP rose by 0.1% in the second quarter, unrevised from an initial estimate. The unemployment rate edged up in July by 0.1 percentage points to 9.5%.

Industrial production in **Japan** rose by 1.9% in July. Although this was the fifth straight monthly increase, output was still almost 23% lower than a year earlier.

**Britain's** GDP fell by 0.7% in the second quarter, revised up from an earlier estimate of a 0.8% decline.

**India's** GDP grew by 6.1% in the 12 months to the end of the second quarter.

## **Output, prices and jobs**

Sep 3rd 2009

From The Economist print edition

# Output, prices and jobs

% change on year ago

	Gross domestic product				Industrial production latest	Consumer prices			Unemployment rate†, %
	latest	qtr*	2009†	2010†		latest	year ago	2009†	
United States	-3.9 Q2	-1.0	-2.6	+2.0	-13.1 Jul	-2.1 Jul	+5.6	-0.3	9.4 Jul
Japan	-6.4 Q2	+3.7	-6.4	+1.1	-22.9 Jul	-2.2 Jul	+2.3	-1.1	5.7 Jul
China	+7.9 Q2	na	+8.1	+8.5	+10.8 Jul	-1.8 Jul	+6.3	-0.8	9.0 2008
Britain	-5.5 Q2	-2.6	-4.2	+1.0	-11.0 Jun	+1.8 Jul§	+4.4	+1.8	7.8 May††
Canada	-3.2 Q2	-3.4	-2.2	+1.8	-12.7 Jun	-0.9 Jul	+3.4	+0.5	8.6 Jul
Euro area	-4.7 Q2	-0.5	-4.4	+0.6	-17.0 Jun	-0.2 Aug	+3.8	+0.5	9.5 Jul
Austria	-4.4 Q2	-1.7	-3.2	+0.2	-11.4 Jun	-0.2 Jul	+3.8	+0.5	4.4 Jul
Belgium	-3.8 Q2	+1.6	-3.5	+0.4	-17.3 May	-0.8 Aug	+5.4	+0.3	12.3 Jul††
France	-2.6 Q2	+1.4	-2.8	+0.8	-12.8 Jun	-0.7 Jul	+3.6	+0.2	9.8 Jul
Germany	-5.9 Q2	+1.3	-5.9	+0.8	-18.0 Jun	nil Aug	+3.1	+0.2	8.3 Aug
Greece	-0.2 Q2	+1.3	-3.5	-0.8	-11.4 Jun	+0.6 Jul	+4.9	+0.5	8.5 May
Italy	-6.0 Q2	-1.9	-5.1	+0.4	-21.9 Jun	+0.2 Aug	+4.1	+0.8	7.3 Q1
Netherlands	-5.1 Q2	-3.4	-4.3	+0.7	-12.7 Jun	+0.3 Aug	+3.2	+1.3	4.8 Jul††
Spain	-4.2 Q2	-4.2	-3.9	-0.6	-14.5 Jun	-1.4 Jul	+5.3	-0.4	18.5 Jul
Czech Republic	-4.9 Q2	+1.2	-3.5	+1.2	-12.2 Jun	+0.3 Jul	+6.9	+1.5	8.4 Jul
Denmark	-4.1 Q1	-4.2	-3.9	+0.6	-18.6 Jun	+1.0 Jul	+4.0	+1.1	3.7 Jul
Hungary	-7.6 Q2	-8.1	-6.3	-1.0	-18.6 Jun	+5.1 Jul	+6.7	+4.3	9.7 Jul††
Norway	-4.8 Q2	-5.0	-2.0	+0.5	-6.3 Jun	+2.2 Jul	+4.3	+2.5	3.0 Jun***
Poland	+1.1 Q2	na	-0.8	+1.5	-4.6 Jul	+3.6 Jul	+4.8	+3.2	10.8 Jul††
Russia	-10.9 Q2	na	-7.0	+2.5	-10.8 Jul	+12.0 Jul	+14.7	+12.1	8.3 Jul††
Sweden	-6.2 Q2	-0.1	-4.9	+1.3	-20.8 Jun	-0.9 Jul	+4.1	-0.2	7.9 Jul††
Switzerland	-2.0 Q2	-1.0	-2.3	+0.4	-9.4 Q1	-1.2 Jul	+3.1	-0.5	3.9 Jul
Turkey	-13.8 Q1	na	-5.6	+2.3	-9.7 Jun	+5.4 Jul	+12.1	+6.2	13.6 May††
Australia	+0.6 Q2	+2.5	nil	+1.8	-3.8 Q2	+1.5 Q2	+4.5	+1.7	5.8 Jul
Hong Kong	-3.8 Q2	+13.9	-5.4	+2.6	-10.2 Q1	-1.5 Jul	+6.3	nil	5.4 Jul††
India	+6.1 Q2	na	+5.5	+6.3	+7.8 Jun	+11.9 Jul	+8.3	+6.0	6.8 2008
Indonesia	+4.0 Q2	na	+4.1	+4.4	+0.2 Jun	+2.8 Aug	+11.8	+4.4	8.1 Feb
Malaysia	-3.9 Q2	na	-5.0	+3.3	-9.6 Jun	-2.4 Jul	+8.5	-0.3	4.0 Q1
Pakistan	+2.0 2009**	na	+3.7	+2.7	-4.4 Jun	+11.2 Jul	+24.3	+13.0	5.2 2008
Singapore	-3.5 Q2	+20.7	-6.2	+3.2	+12.4 Jul	-0.5 Jul	+6.5	-0.2	3.3 Q2
South Korea	-2.5 Q2	+9.7	-1.8	+2.0	+0.7 Jul	+2.2 Aug	+5.6	+2.6	3.8 Jul
Taiwan	-7.5 Q2	na	-5.7	+2.5	-8.1 Jul	-2.3 Jul	+5.8	-1.3	6.0 Jul
Thailand	-4.9 Q2	+9.6	-4.5	+2.1	-7.3 Jul	-1.0 Aug	+6.5	-1.0	2.4 May
Argentina	+2.0 Q1	+0.2	-3.5	+0.5	-9.0 Jul	+5.5 Jul	+9.1	+6.2	8.8 Q2††
Brazil	-1.8 Q1	-3.3	-1.0	+2.7	-9.9 Jul	+4.5 Jul	+6.4	+4.9	8.0 Jul††
Chile	-4.5 Q2	-1.4	-1.2	+3.0	-7.4 Jul	+0.3 Jul	+9.5	+1.9	10.8 Jul†††
Colombia	-0.6 Q1	+0.9	-1.0	+2.5	-6.6 Jun	+3.3 Jul	+7.5	+4.6	12.6 Jul††
Mexico	-10.3 Q2	-4.4	-7.1	+2.8	-10.6 Jun	+5.4 Jul	+5.4	+5.4	6.1 Jul††
Venezuela	-2.4 Q2	na	-4.2	-2.7	+11.4 Mar	+28.3 Jul	+33.7	+26.6	7.7 Q2††
Egypt	+4.2 Q1	na	+4.5	+3.9	+5.8 Q1	+9.8 Jul	+22.2	+9.8	9.4 Q1††
Israel	+0.1 Q2	+1.0	-1.1	+1.5	-8.6 Jun	+3.5 Jul	+4.8	+3.1	8.0 Q2
Saudi Arabia	+4.5 2008	na	-1.0	+3.3	na	+5.2 Jun	+10.6	+4.3	na
South Africa	-2.8 Q2	-3.0	-2.2	+3.1	-17.1 Jun	+6.7 Jul	+13.4	+7.1	23.6 Jun††
<b>MORE COUNTRIES</b> Data for the countries below are not provided in printed editions of <i>The Economist</i>									
Estonia	-16.6 Q2	na	-13.0	-3.0	-27.8 Jul	-0.7 Jul	+11.1	-0.8	17.0 Jun
Finland	-7.6 Q1	-10.3	-5.4	+0.4	-20.3 Jun	-0.6 Jul	+4.3	nil	8.9 Jul
Iceland	-3.9 Q1	-13.6	-6.5	+0.4	+10.1 2008	+10.9 Aug	+14.5	+12.5	8.0 Jul††
Ireland	-8.5 Q1	-5.7	-7.7	-2.6	+2.6 Jun	-5.9 Jul	+4.4	-3.6	12.2 Jul
Latvia	-18.0 Q1	na	-17.0	-4.0	-18.5 Jun	+2.5 Jul	+16.6	+3.0	17.2 Jun
Lithuania	-22.4 Q2	-40.8	-15.0	-4.5	-15.7 Jul	+3.0 Jul	+12.2	+4.6	9.7 Jul††
Luxembourg	-5.5 Q1	-5.9	-4.9	-0.8	-19.7 May	-0.7 Jul	+4.9	+0.5	5.5 Jul††
New Zealand	-2.2 Q1	-2.7	-2.1	+1.2	-11.4 Q1	+1.9 Q2	+4.0	+1.8	6.0 Q2
Peru	-2.1 Jun	na	+1.3	+2.7	-12.2 Jun	+1.9 Aug	+6.3	+3.5	7.9 Jul††
Philippines	+1.2 Q2	+9.8	-1.0	+3.7	-10.8 Jun	+0.2 Jul	+12.3	+2.9	7.5 Q2††
Portugal	-3.7 Q2	+0.7	-4.1	-0.4	-9.0 Jul	-1.5 Jul	+3.1	-0.7	9.1 Q2††
Slovakia	-5.3 Q2	na	-5.5	+0.7	-19.6 Jun	+2.5 Jul	+4.9	+1.8	12.1 Jul††
Slovenia	-8.5 Q1	na	-6.0	nil	-22.3 Jun	nil Aug	+6.0	+1.1	9.1 Jun††
Ukraine	-20.3 Q1	na	-17.0	+1.0	-27.5 Jun	+15.5 Jul	+26.8	+16.0	2.2 Jul
Vietnam	+4.5 Q2	na	+4.2	+4.8	+7.6 Jul	+2.0 Aug	+28.3	+6.8	4.6 2007

\*% change on previous quarter, annual rate. †The Economist poll or Economist Intelligence Unit estimate/forecast. ‡National definitions. - §RPI inflation rate -1.4 in July. \*\*Year ending June. ††Latest three months. †‡Not seasonally adjusted. \*\*\*Centred 3-month average  
Sources: National statistics offices and central banks; Thomson Reuters; Centre for Monitoring Indian Economy; OECD; ECB



# The Economist commodity-price index

Sep 3rd 2009

From The Economist print edition

## The Economist commodity-price index

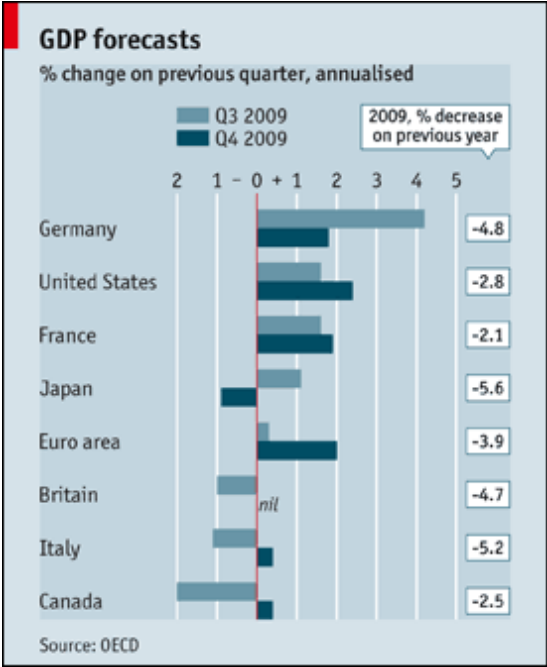
2000=100

	Aug 25th	Sep 1st*	% change on	
			one month	one year
<b>Dollar index</b>				
All items	194.2	191.2	-2.4	-18.5
Food	200.0	196.4	-5.4	-18.3
<b>Industrials</b>				
All	186.7	184.6	+2.0	-18.9
Nfa†	145.4	145.3	+3.0	-23.4
Metals	209.3	206.0	+1.6	-17.0
<b>Sterling index</b>				
All items	179.8	178.7	+1.6	-10.3
<b>Euro index</b>				
All items	125.3	123.6	-1.8	-17.3
<b>Gold</b>				
\$ per oz	942.90	951.15	-1.3	+19.3
<b>West Texas Intermediate</b>				
\$ per barrel	71.88	68.26	-4.3	-38.1

\*Provisional †Non-food agriculturals.

# GDP forecasts

Sep 3rd 2009  
From The Economist print edition



The OECD notes the “mostly favourable” economic news over the past few months in an update of its growth forecasts for big and rich economies. The think-tank reckons the German economy will grow more quickly than its peers in the third quarter. America’s GDP is expected to grow at an annualised rate of 2.4% in the fourth quarter. The outlook looks less rosy for Japan, Italy and Britain, which are all forecast to endure further declines in GDP before the year is out. Canada’s prospects ought to be brighter, because of its relatively small financial sector and its large commodity-based export industries. Despite these blessings, the OECD thinks Canada’s economy will shrink at an annualised rate of 2% in the third quarter.

## Trade, exchange rates, budget balances and interest rates

Sep 3rd 2009

From The Economist print edition

## Trade, exchange rates, budget balances and interest rates

	Trade balance* latest 12 months, \$bn	Current-account balance		Currency units, per \$		Budget balance % of GDP 2009†	Interest rates, %	
		latest 12 months, \$bn	% of GDP 2009†	Sep 2nd	year ago		3-month latest	10-year gov't bonds, latest
United States	-639.5 Jun	-628.3 Q1	-3.0	-	-	-13.5	0.19	3.29
Japan	+9.0 Jun	+115.3 Jun	+2.5	92.5	108	-7.4	0.40	1.28
China	+269.4 Jul	+130.0 Q2	+6.1	6.83	6.84	-4.2	1.74	3.57
Britain	-139.8 Jun	-52.5 Q1	-1.7	0.62	0.56	-14.4	0.70	3.68
Canada	+15.5 Jun	-19.1 Q2	-2.3	1.11	1.06	-2.4	0.20	3.31
Euro area	-40.1 Jun	-157.5 Jun	-1.3	0.70	0.69	-6.5	0.81	3.24
Austria	-5.5 May	+10.7 Q1	+1.6	0.70	0.69	-5.2	0.81	3.78
Belgium	+6.3 May	-11.8 Mar	-2.4	0.70	0.69	-6.0	0.82	3.72
France	-71.1 Jun	-58.3 Jun	-2.1	0.70	0.69	-8.2	0.81	3.55
Germany	+182.0 Jun	+159.9 Jun	+3.7	0.70	0.69	-4.7	0.81	3.23
Greece	-50.6 Jun	-41.6 Jun	-8.5	0.70	0.69	-6.8	0.82	4.57
Italy	-11.9 May	-62.8 Jun	-2.8	0.70	0.69	-5.4	0.81	4.10
Netherlands	+43.5 Jun	+50.0 Q1	+6.1	0.70	0.69	-4.2	0.81	3.57
Spain	-92.5 Jun	-117.2 May	-7.1	0.70	0.69	-10.3	0.81	3.80
Czech Republic	+4.3 Jun	-4.7 Jun	-2.0	18.1	17.2	-4.8	1.88	5.06
Denmark	+6.2 Jun	+8.1 Jun	+1.5	5.23	5.16	-2.5	1.84	3.59
Hungary	+2.0 Jun	-11.3 Q1	-2.9	194	165	-4.3	7.93	8.33
Norway	+58.0 Jul	+69.5 Q2	+14.6	6.09	5.54	7.1	1.95	4.06
Poland	-13.5 Jun	-11.7 Jun	-3.3	2.93	2.33	-3.9	4.17	6.10
Russia	+122.2 Jun	+55.3 Q2	+1.9	32.0	25.2	-8.0	10.75	11.13
Sweden	+12.9 Jul	+31.4 Q1	+6.7	7.23	6.55	-4.7	0.14	3.29
Switzerland	+15.8 Jul	+56.6 Q1	+7.4	1.06	1.11	-1.3	0.31	1.98
Turkey	-42.9 Jul	-20.3 Jun	-0.4	1.51	1.21	-5.8	8.32	5.99†
Australia	+5.3 Jul	-29.0 Q2	-4.0	1.20	1.20	-3.9	3.38	5.39
Hong Kong	-21.0 Jul	+29.6 Q1	+9.2	7.75	7.81	-3.9	0.20	2.20
India	-87.4 Jul	-29.8 Q1	-1.2	49.0	44.4	-7.8	3.39	7.65
Indonesia	+12.5 Jul	+4.4 Q2	+1.2	10,140	9,207	-2.8	6.99	6.60†
Malaysia	+38.2 Jun	+40.5 Q1	+14.1	3.54	3.44	-8.0	2.14	1.99†
Pakistan	-16.3 Jul	-12.2 Q1	-3.2	82.7	76.9	-4.3	12.54	10.44†
Singapore	+18.4 Jul	+21.4 Q2	+14.4	1.44	1.44	-4.1	0.50	2.36
South Korea	+20.8 Jul	+27.6 Jul	+3.2	1,250	1,149	-5.0	2.57	5.27
Taiwan	+15.9 Jul	+31.9 Q2	+10.3	32.9	31.8	-5.2	0.85	1.35
Thailand	+11.3 Jul	+9.0 Jul	+5.2	34.1	34.5	-5.6	1.35	3.13
Argentina	+17.5 Jul	+6.8 Q1	+3.4	3.85	3.05	-0.9	13.94	na
Brazil	+27.8 Aug	-17.9 Jul	-1.3	1.90	1.67	-2.8	8.65	6.16†
Chile	+4.5 Jul	-3.6 Q2	-0.9	558	517	-4.0	0.48	2.21†
Colombia	-0.1 Jun	-6.5 Q1	-3.3	2,066	1,995	-3.0	5.02	5.63†
Mexico	-16.0 Jul	-14.0 Q2	-2.4	13.6	10.4	-4.0	4.47	8.06
Venezuela	+18.5 Q2	+10.3 Q2	+1.4	6.44\$	4.00\$	-7.6	14.56	6.55†
Egypt	-26.1 Q1	-2.9 Q1	-2.1	5.53	5.40	-6.9	9.58	2.76†
Israel	-8.7 Jul	+4.1 Q1	+1.7	3.80	3.60	-5.7	0.82	4.04
Saudi Arabia	+212.0 2008	+134.0 2008	+5.6	3.75	3.75	-0.3	0.65	na
South Africa	-3.6 Jul	-18.7 Q1	-5.3	7.85	7.86	-4.5	7.20	8.75
<b>MORE COUNTRIES</b> Data for the countries below are not provided in printed editions of <i>The Economist</i>								
Estonia	-2.2 Jun	-0.5 Jun	+0.7	11.0	10.8	-3.5	5.58	na
Finland	+5.6 Jun	+3.1 Jun	+0.6	0.70	0.69	-2.8	0.79	3.59
Iceland	+0.7 Jul	-6.1 Q1	-5.9	127	85.0	-13.3	7.92	na
Ireland	+49.8 Jun	-11.3 Q1	-3.0	0.70	0.69	-13.0	0.81	4.77
Latvia	-3.8 Jun	-0.7 Jun	+2.0	0.49	0.49	-11.0	9.67	na
Lithuania	-3.9 Jun	-1.5 Jun	+1.3	2.43	2.39	-7.0	7.44	na
Luxembourg	-6.9 Jun	+2.2 Q1	na	0.70	0.69	-4.0	0.81	na
New Zealand	-2.1 Jul	-11.8 Q1	-7.7	1.49	1.47	-6.8	3.70	5.70
Peru	+2.3 Jun	-2.1 Q2	-2.3	2.95	2.97	-2.3	1.25	na
Philippines	-6.9 Jun	+5.1 Mar	+4.5	48.9	46.7	-3.1	4.25	na
Portugal	-28.2 Jun	-24.2 Jun	-8.8	0.70	0.69	-7.4	0.81	3.94
Slovakia	-0.3 Jun	-4.3 Jun	-7.0	21.2	20.9	-5.5	1.35	3.93
Slovenia	-2.9 Jun	-1.9 Jun	-1.6	0.70	0.69	-5.7	0.82	na
Ukraine	-13.4 Q1	-6.5 Q2	-0.5	8.62	4.75	-7.0	13.60	na
Vietnam	-6.6 Aug	-7.0 2007	-6.9	17,820	16,590	-9.0	8.67	6.11

\*Merchandise trade only. †The Economist poll or Economist Intelligence Unit forecast. ‡Dollar-denominated bonds. §Unofficial exchange rate.

Sources: National statistics offices and central banks; Bloomberg; Thomson Reuters; JPMorgan; Bank Leumi le-Israel; Centre for Monitoring Indian Economy; Hong Kong Monetary Authority; Standard Bank Group; UBS; Westpac.



**Markets**

Sep 3rd 2009  
From The Economist print edition



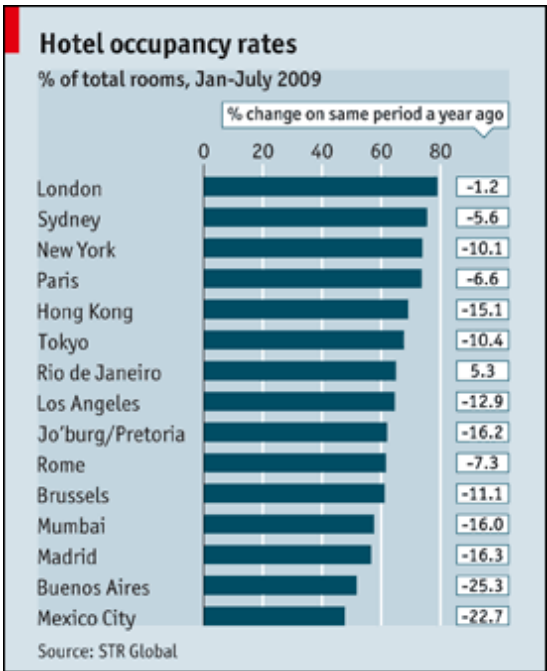
# Markets

	Index Sep 2nd	% change on	
		one week	Dec 31st 2008 in local currency in \$ terms
United States (DJIA)	9,280.7	-2.8	+5.7 +5.7
United States (S&P 500)	994.8	-3.2	+10.1 +10.1
United States (NAScomp)	1,967.1	-2.8	+24.7 +24.7
Japan (Nikkei 225)	10,280.5	-3.4	+16.0 +11.5
Japan (Topix)	949.8	-2.6	+10.5 +6.2
China (SSEA)	2,849.2	-8.5	+49.0 +48.9
China (SSEB, \$ terms)	187.3	-7.3	+69.1 +68.9
Britain (FTSE 100)	4,817.6	-1.5	+8.6 +22.5
Canada (S&P TSX)	10,701.3	-1.9	+19.1 +33.9
Euro area (FTSE Euro 100)	834.4	-3.0	+11.8 +14.5
Euro area (DJ STOXX 50)	2,703.8	-3.1	+10.5 +13.1
Austria (ATX)	2,396.6	-4.3	+36.9 +40.1
Belgium (Bel 20)	2,290.7	-4.6	+20.0 +22.9
France (CAC 40)	3,573.1	-2.6	+11.0 +13.7
Germany (DAX)*	5,319.8	-3.7	+10.6 +13.2
Greece (Athex Comp)	2,478.0	-2.7	+38.7 +42.0
Italy (S&P/MIB)	21,773.6	-3.5	+11.9 +14.6
Netherlands (AEX)	289.1	-3.2	+17.5 +20.3
Spain (Madrid SE)	1,148.7	-3.4	+17.7 +20.5
Czech Republic (PX)	1,120.1	-4.1	+30.5 +40.8
Denmark (OMXC20)	304.2	-3.6	+34.5 +37.7
Hungary (BUX)	18,349.4	-6.1	+49.9 +51.9
Norway (OSEAX)	342.4	-4.5	+26.7 +46.1
Poland (WIG)	35,784.4	-6.4	+31.4 +34.7
Russia (RTS, \$ terms)	1,053.2	-1.8	+72.5 +66.7
Sweden (OMXS30)†	873.4	-3.3	+31.9 +46.4
Switzerland (SMI)	6,089.2	-1.4	+10.0 +9.6
Turkey (ISE)	45,761.0	-2.6	+70.3 +74.5
Australia (All Ord.)	4,436.6	-0.6	+21.2 +43.5
Hong Kong (Hang Seng)	19,522.0	-4.6	+35.7 +35.7
India (BSE)	15,467.5	-1.9	+60.3 +59.7
Indonesia (JSX)	2,285.9	-4.0	+68.7 +83.4
Malaysia (KLSE)	1,168.0	-0.4	+33.2 +30.8
Pakistan (KSE)	8,878.6	+6.7	+51.4 +44.7
Singapore (STI)	2,569.9	-2.2	+45.9 +45.3
South Korea (KOSPI)	1,613.2	-0.1	+43.5 +45.1
Taiwan (TWI)	7,039.8	+4.8	+53.3 +52.9
Thailand (SET)	654.1	-0.6	+45.4 +48.6
Argentina (MERV)	1,753.7	-1.4	+62.4 +45.7
Brazil (BVSP)	55,385.0	-4.1	+47.5 +84.0
Chile (IGPA)	14,949.4	-3.1	+32.0 +53.4
Colombia (IGBC)	10,355.4	-3.0	+37.0 +50.5
Mexico (IPC)	27,953.3	-0.9	+24.9 +31.9
Venezuela (IBC)	50,977.0	+3.7	+45.3 +56.4
Egypt (Case 30)	6,543.5	-3.5	+42.4 +41.8
Israel (TA-100)	885.7	-4.2	+57.0 +56.2
Saudi Arabia (Tadawul)	5,617.3	-2.5	+17.0 +17.0
South Africa (JSE AS)	24,536.2	-2.3	+14.1 +34.0
Europe (FTSEurofirst 300)	950.4	-2.4	+14.2 +17.0
World, dev'd (MSCI)	1,058.9	-2.5	+15.1 +15.1
Emerging markets (MSCI)	831.0	-2.4	+46.6 +46.6
World, all (MSCI)	268.8	-2.5	+18.1 +18.1
World bonds (Citigroup)	826.8	+0.8	+2.1 +2.1
EMBI+ (JPMorgan)	463.0	nil	+18.3 +18.3
Hedge funds (HFRX)‡	1,107.3	-0.1	+8.5 +8.5
Volatility, US (VIX)	28.9	25.0	40.0 (levels)
CDs, Eur (iTRAXX)‡	110.3	+5.3	-45.4 -44.1
CDs, N Am (CDX)‡	176.3	+3.7	-24.5 -24.5
Carbon trading (EU ETS) €	15.1	-0.9	-6.6 -4.4

\*Total return index. †New series. ‡Credit-default swap spreads, basis points.  
 Sources: National statistics offices, central banks and stock exchanges;  
 Thomson Reuters; WM/Reuters; JPMorgan Chase; Bank Leumi le-Israel;  
 CBOE; CMIE; Danske Bank; EEX; HKMA; Markit; Standard Bank Group; UBS;  
 Westpac. §Sep 1st

# Hotel occupancy rates

Sep 3rd 2009  
From The Economist print edition



Hotels in most big cities around the world are emptier than they were last year, according to STR Global, a research firm. London has weathered the global downturn better than most cities. Almost 79% of its hotel rooms were taken by paying customers in the seven months to July, the highest occupancy rate of the 87 cities in the survey, and little changed from the same period last year. Fewer business visitors and the trend for taking holidays closer to home have hurt hotel trade in the capitals of Argentina, Mexico and Spain. In Mexico City, more than half of all hotel rooms lie empty. Rio is one of only six cities where hotels are busier. The occupancy rate there has risen to 65%, just above the global average of 63%.